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MEMORANDUM

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CASE FILE
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MONTHLY AND ANNUAL PERCENTAGE LEVELS OF WIND
SPEED DIFFERENCES COMPUTED BY USING
FPS-16 RADAR/JIMSPHERE WIND PROFILE
DATA FROM CAPE KENNEDY, FLORIDA

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16. ABSTRACT <p>This report presents the percentage levels of wind speed differences computed from sequential FPS-16 radar/Jimsphere wind profiles. The results are based on monthly profiles obtained from December 1964 to July 1970 at Cape Kennedy, Florida. The profile sequences contain a series of three to ten Jimspheres released at approximately 1.5-hour intervals. The results given are the persistence analysis of wind speed difference at 1.5-hour intervals to a maximum time interval of 12 hours. Tables 1a through 12e are the monthly percentage levels of wind speed differences and Tables 13a through 13e are the annual percentage of wind speed differences.</p> <p>The percentage levels are based on the scalar wind speed changes calculated over an altitude interval of approximately 50 meters and printed out every 25 meters as a function of initial wind speed within each five-kilometer layer from near sea level to 20 km. In addition, analyses were made of the wind speed differences for the 0.2 to 1 km layer as an aid for studies associated with take-off and landing of the Space Shuttle. The results may be used as an aid to (1) predict statistical wind speed change limits of lower and upper level winds, (2) provide an understanding of the statistical probabilities of wind speed changes as a function of time, and (3) apply the data in the study of winds aloft for such projects as the Space Shuttle, HEAO, Skylab, and aeronautical vehicles. Information such as this is also important to many aerospace vehicle structural and control system designers in studying the effects of wind speed variations on the prelaunch monitorship and wind biasing schemes. The availability of this type of information is also important in mission planning and operational analyses plus general meteorological forecasting studies.</p>					
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I. INTRODUCTION

When launching vertically rising vehicles, it is desirable to predict what the lower and upper atmospheric wind conditions will be at the time of launch. Starting about 50 hours before and continuing to the time of launch at specified time intervals, MSFC's Aero-Astroynamics Laboratory personnel in the Prelaunch Monitoring Group are responsible for conducting vehicle response simulations which duplicate the total vehicle dynamic and bending moment responses to the Jimsphere wind velocity data. Perusal of these sequential runs is necessary to predict the wind conditions likely to occur at flight time. This information is used with the computed nominal bending moment curves to furnish the predicted margin of safety for the entire flight.

Figure 1 is a composite of 12 FPS-16 radar/Jimsphere wind profile measurements on November 8 and 9, 1967 at Cape Kennedy, Florida, illustrating the prelaunch program at Marshall Space Flight Center [1]. These Jimspheres were released for the Saturn 501/Apollo launch on November 9, 1967 (1200Z). The first Jimsphere was released at 0613Z on November 8, 1967 and the last release in the sequential run was on November 9, 1967, 1220Z (20 min. after launch).

The monthly and annual variations of wind from 1.5-hour interval daily sequential data are presented to better understand the subject of wind variability and improve predictions. Not only are the wind velocities (velocity changes as a function of height and time, maximum wind speed, etc.) observed as the data are collected, but the results of various environmental studies on the lower- and upper-level winds are also used to enhance the prelaunch wind analysis. Included in this report are results which are useful in predicting (statistically) lower- and upper-level wind change conditions for the Cape Kennedy area. These results are applicable only in the Cape Kennedy, Florida area since there are definite differences in lower and upper atmospheric wind flow conditions from place to place.

II. DATA SOURCE AND ANALYSIS

The daily sequential Jimsphere releases at Cape Kennedy were analyzed as follows. Each sequential set of wind profiles was used as an independent sample of data. Normally, the balloon releases are about 1.5 hours apart. Since the hourly sequential runs may be greater or even less than one hour, a ± 45 -minute tolerance between release times of the balloons was used. Specifically, the following classification was used to identify the balloon's release elapsed time

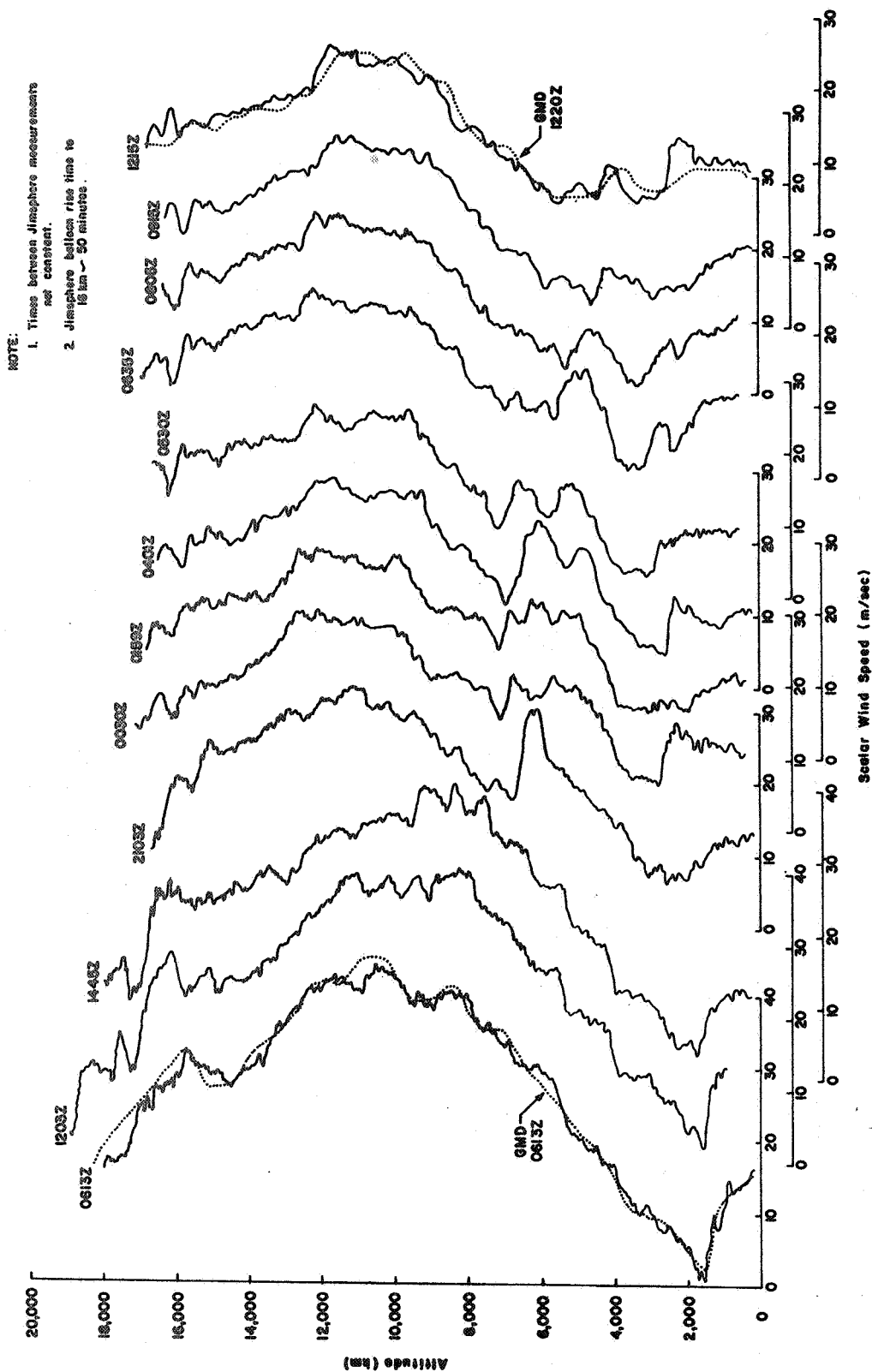


Figure 1. Composite of 12 FPS-16 Radar/Jimsphere Balloon Wind Profile Measurements, Cape Kennedy, Florida (ETR) November 8 and 9, 1967, Scalar Wind Speed vs Altitude

for the sequential wind profile data. Of course, the first Jimsphere balloon of each sequence was identified as the zero hour release.

Time Classification and Balloon Release Time Range (hr)

<u>n</u>	<u>Time Classification ($n\Delta t$ - hrs)*</u>	<u>Balloon Release Time Range (hr)**</u>
1	1.5	0.75 - 2.24
2	3.0	2.25 - 3.74
3	4.5	3.75 - 5.24
4	6.0	5.25 - 6.74
5	7.5	6.75 - 8.24
6	9.0	8.25 - 9.74
7	10.5	9.75 - 11.24
8	12.0	11.25 - 12.74

* $\Delta t = 1.5$ hr

** Time in hundredths of hrs.

The first balloon of each sequence was identified as the zero-hour release. Again, the second release was identified as zero-hour release. As an example, in a sequence of four Jimsphere releases at 1.5 hours apart at 1200, 1330, 1500, and 1630 ZULU, there were three observations separated by 1.5 hours, two observations separated by 3.0 hours and one observation at a Δt of 4.5 hours.

The data were grouped into five layers, namely, 1-5, 5-10, 10-15, and 15-20 km. In addition, a grouping was made for the 0.2 to 1 km layer. Scalar wind speed at each 25-meter height interval was used within each 5-km layer. Example scalar winds at 1000, 1025, 1050, 1075, ..., 4975 meters will appear in the 1-5 km altitude group. This procedure was followed for each of the five layers. The data computation was the same as presented in reference 2, with one exception, i.e., no wind direction grouping was used in the sequential wind profile analysis.

As an example, for the first reading (W_0) for a given sample of sequential data, the wind speed classification was determined as follows [2]:

Class S1	0 to 9.9 m sec ⁻¹
Class S2	10 to 19.9 m sec ⁻¹
.	.
.	.
Class S8	80 m sec ⁻¹ and above.

The wind speed differences between the W_0 reading and the succeeding readings for the same altitude were tabulated:

$$\Delta W = \frac{W - W_0}{n\Delta t}$$

where $\Delta t = 1.5$ hr. and $n = 1, 2, 3, 4, \dots, 8$. The sign of ΔW was maintained.

All of the ΔW for each of the independent sequential runs during each month were grouped into the five layers, respectively. A cumulative frequency distribution was then computed for each monthly group. From this distribution, discrete levels (1.0, 5.0, 10.0, 25.0, 50.0, 75.0, 90.0, 95.0, and 99.0 percent) can be determined. These results are presented in Tables 1a through 12e.

The results presented in the tables are wind speed differences classified according to the initial requirements. These differences will not be exceeded during the percentage of time equal to the probability level of occurrence. For example, in Table 1b the value given for January, 1-5 km layer, 0-10 m sec⁻¹, 3.0 hr lapse time, and 90 percent level is 3.3 m sec⁻¹. Therefore, it is to be expected that 90 percent of the time the wind speed (for the stated conditions) will not increase more than 3.3 m sec⁻¹, i.e., if the wind speed was 5 m sec⁻¹ at a given time, then 3.0 hours later it could be less than or equal to 8.8 m sec⁻¹ for 90 percent of the time. This value of 3.3 m sec⁻¹ was obtained from the cumulative frequency distribution as explained in the preceding paragraph.

The number of observations (wind profile values) used to compute the respective increasing and decreasing wind speed values is given at the bottom of each table.

III. ACCURACY OF DATA

A study of the accuracies of wind data measured by the FPS-16 radar/Jimsphere method is presented in references 3 and 4. There has been no attempt to try to determine the statistical accuracies of the wind speed differences. However, the confidence placed in the tabular values decreased outward from the center value (50.0 percent); i.e., the least amount of confidence should be placed in the extreme levels (1.0 and 99.0 percentiles). Furthermore, the number of observations gives a measure of the statistical confidence that may be placed in the results obtained. Thus, limited confidence should be placed in tables having less than about 30 observations. As indicated in references 3 and 4, the RMS error in the Jimsphere/FPS-16 radar measured wind data is on the order of 0.5 m sec^{-1} . The evaluation of the FPS-16 radar/Jimsphere system was based on data acquired during normal range operational use of the tracking radar because, if the system is to be readily useable at various locations, an estimate is desired of the operation system accuracy without imposing constraints relative to special tracking techniques, etc.

IV. COMMENTS

The monthly and annual percentage levels of wind speed differences presented in this report were obtained from monthly sequential profiles of FPS-16 radar/Jimsphere wind profile data from December 1964 to July 1970, Cape Kennedy, Florida. Therefore, the data are directly applicable to the specified area and immediate surroundings of KSC. The results presented will be a useful aid to the meteorologist in predicting atmospheric winds and wind speed variability for aerospace vehicle launch operations. These data will also be useful to all aerospace engineers in studying the design, launch, and flight response of vehicles.

TABLE 1a. ALTITUDE .2 TO 1 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
JAN. WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.021	-3.862	-4.331	-5.369	-4.526	-4.353	-2.565	-1.257		
5.0	-2.261	-2.478	-3.125	-3.425	-3.839	-3.646	-2.106	-1.047		
10.0	-1.514	-1.503	-2.367	-2.303	-3.196	-2.800	-1.148	-.010		
25.0	-.245	-.611	-.898	-.823	-1.643	-1.272	.767	.852		
50.0	.192	.034	-.253	.022	-.064	-.069	2.320	2.179		
75.0	.845	.858	.481	.775	1.035	1.320	3.448	4.190		
90.0	1.748	1.697	2.194	1.911	3.011	3.050	4.405	4.499		
95.0	2.380	2.646	2.893	2.628	3.968	3.602	4.693	4.668		
99.0	3.431	3.925	3.654	3.653	5.290	5.588	4.923	4.668		
NO. OF OBS	813	738	507	469	228	159	36	77		

ALTITUDE .2 TO 1 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
JAN. WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.438	-6.139	-5.409	-3.054	-3.306	.965	-2.398	-.893		
5.0	-4.789	-5.816	-4.926	-2.992	-3.172	.983	-2.271	-.865		
10.0	-4.003	-5.303	-4.044	-2.914	-3.003	1.007	-2.111	-.829		
25.0	-2.540	-2.487	-1.779	-2.477	-2.498	1.077	-1.633	-.723		
50.0	-1.172	-1.456	-1.315	-.867	-1.780	1.241	-.996	-.547		
75.0	.053	-.552	-.731	-.138	.170	1.476	-.597	-.370		
90.0	.798	1.409	.476	.125	.919	1.616	-.199	-.052		
95.0	1.034	1.757	.878	.223	1.129	1.663	-.039	.089		
99.0	1.335	1.999	1.659	.301	1.298	1.701	.088	.202		
NO. OF OBS	89	41	26	23	18	5	5	5		

TABLE 1b. ALTITUDE 1 TO 5 (KM)
JAN. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.572	-4.901	-5.738	-5.719	-5.220	-5.223	-5.014	-6.918		
5.0	-3.467	-3.106	-3.332	-3.819	-3.707	-4.067	-4.748	-5.385		
10.0	-2.161	-2.368	-2.134	-2.864	-4.483	-3.084	-4.415	-5.007		
25.0	-2.366	-1.195	-2.950	-1.341	.336	-1.656	-2.864	-3.760		
50.0	.827	.427	1.258	.167	1.942	.585	-1.252	.516		
75.0	1.908	1.987	3.203	2.063	3.937	2.345	.460	2.181		
90.0	3.490	3.277	4.884	4.406	6.271	4.220	5.240	3.556		
95.0	4.245	4.234	6.556	5.657	7.164	5.659	5.620	4.988		
99.0	5.882	7.570	10.096	8.477	10.100	8.209	5.924	5.607		
NO. OF OBS	1166	1556	849	1026	451	493	48	202		

ALTITUDE 1 TO 5 (KM)
JAN. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.278	-4.721	-5.402	-7.151	-8.832	-5.532	-4.816	-4.287		
5.0	-3.717	-3.619	-4.498	-5.852	-7.580	-3.607	-4.309	-4.117		
10.0	-2.696	-3.064	-3.840	-4.485	-4.730	-3.202	-3.533	-3.903		
25.0	-1.493	-1.982	-2.438	-2.170	-2.110	-2.167	-1.567	-2.835		
50.0	-.361	-.760	-.627	-.101	-.526	-.932	.589	-1.448		
75.0	.815	.883	1.506	2.765	1.849	.421	2.727	1.435		
90.0	1.988	2.291	3.157	5.874	8.509	2.535	3.796	3.214		
95.0	2.923	3.174	4.125	8.104	9.979	3.976	4.176	3.676		
99.0	4.612	4.524	6.202	9.971	10.879	4.571	4.672	4.103		
NO. OF OBS	1863	1207	886	582	325	79	44	50		

TABLE 1b (cont'd). ALTITUDE 1 TO 5 (KM)
JAN. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.581	-7.751	-8.280	-10.062	-9.020	-4.131	-2.494	-3.546		
5.0	-4.105	-6.398	-6.609	-7.597	-8.622	-4.014	-2.391	-3.212		
10.0	-3.144	-4.775	-5.612	-5.469	-5.645	-3.807	-2.262	-2.794		
25.0	-1.283	-1.858	-1.111	-2.463	-3.437	-2.886	-1.635	-2.094		
50.0	.158	.705	.908	.820	-1.624	-1.578	-.630	-.455		
75.0	1.641	2.445	3.303	3.743	1.678	-.321	1.855	1.472		
90.0	2.979	4.367	4.899	5.748	6.361	.265	2.579	2.117		
95.0	3.396	5.908	7.108	6.774	6.907	.363	2.759	2.311		
99.0	4.081	6.902	8.390	8.706	7.938	.441	2.904	2.534		
NO. OF OBS	420	251	294	261	133	43	43	43		

ALTITUDE 1 TO 5 (KM)
JAN. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.677	-8.811	-7.896	-5.136	-8.637	-8.318	-4.250	-4.132		
5.0	-5.985	-8.694	-7.601	-4.998	-8.304	-8.109	-4.168	-4.062		
10.0	-5.405	-8.481	-7.233	-4.827	-7.864	-7.848	-4.065	-3.974		
25.0	-4.794	-8.195	-6.127	-4.371	-6.699	-6.988	-3.697	-3.357		
50.0	-2.914	-7.438	-2.910	-3.942	-5.052	-6.632	-3.123	-2.521		
75.0	.818	-6.709	.537	-2.933	-3.270	-4.140	-1.730	-1.376		
90.0	2.021	-5.894	1.505	-2.419	-1.426	-3.043	-.583	-1.127		
95.0	2.335	-5.797	1.827	-2.247	-.986	-2.887	-.379	-1.053		
99.0	2.587	-5.719	2.085	-1.107	-.653	-2.761	-.092	-.995		
NO. OF OBS	51	26	51	51	51	25	25	25		

TABLE 1c. ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	12.0
1.0	.174	-1.165	1.041	-.956	1.863	-.652	-.092
5.0	.418	-.783	1.245	-.537	1.674	-.540	.022
10.0	.458	-.491	1.349	-.155	1.888	-.399	.165
25.0	.578	-.018	1.698	.265	1.931	.312	.648
50.0	.798	.397	2.690	1.049	1.979	1.081	1.113
75.0	1.256	1.335	3.327	1.981	2.014	2.129	1.672
90.0	1.832	2.216	3.455	2.756	2.036	2.685	2.057
95.0	1.939	2.561	3.494	3.440	2.043	2.797	2.163
99.0	2.186	3.275	3.532	4.320	2.049	2.954	2.249
NO. OF OBS	21	183	18	143	3	67	25

ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	12.0
1.0	-3.318	-3.057	-2.429	-2.445	-.712	-2.684	-3.662
5.0	-2.181	-1.868	-1.139	-1.689	.081	-1.736	-3.332
10.0	-1.638	-1.420	-.595	-1.192	.722	-1.397	-2.804
25.0	-.598	-.193	.840	.343	2.213	-.375	-1.069
50.0	.630	1.307	2.811	2.367	4.683	1.247	-.391
75.0	1.954	3.280	4.818	5.183	6.878	3.903	1.089
90.0	3.696	4.887	6.286	7.608	9.004	7.038	1.974
95.0	4.424	6.074	7.232	9.722	9.414	7.405	2.457
99.0	5.674	8.011	8.339	11.827	10.109	8.343	3.327
NO. OF OBS	1890	2147	1360	1142	597	462	148

TABLE 1c (cont'd). ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.340	-3.898	-2.258	-4.297	3.008	-4.846	.000	-3.833		
5.0	-2.518	-2.764	-1.289	-4.126	3.161	-4.511	.000	-3.764		
10.0	-1.358	-2.066	-.223	-3.913	3.351	-4.325	.000	-3.678		
25.0	-.395	-.630	1.885	-3.155	3.923	-3.628	.000	-3.324		
50.0	.693	1.164	2.966	-.799	4.803	-3.026	.000	-2.894		
75.0	2.072	3.000	3.830	3.406	5.741	-2.271	.000	-2.543		
90.0	3.412	4.280	4.787	5.623	6.384	-2.062	.000	-1.498		
95.0	4.080	5.090	5.424	6.575	6.843	-2.012	.000	-1.239		
99.0	5.138	6.136	6.346	7.627	7.529	-1.808	.000	-.893		
NO. OF OBS	990	627	241	165	29	71	0	27		

ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.472	-6.678	-6.004	-6.300	-7.457	-7.892	-7.915	-7.828		
5.0	-3.866	-5.647	-4.373	-4.338	-5.682	-7.618	-7.333	-7.222		
10.0	-3.070	-3.809	-2.978	-3.392	-3.862	-7.215	-6.605	-6.464		
25.0	-1.913	-2.278	-.933	-.978	-2.722	-5.320	-4.423	-4.190		
50.0	.134	.392	.826	1.518	1.669	-4.026	-3.541	-1.778		
75.0	1.331	2.484	3.669	5.276	5.836	-3.069	-3.134	-.941		
90.0	2.409	3.878	5.035	6.669	6.955	-2.643	-2.915	-.617		
95.0	3.168	4.985	5.843	7.559	7.612	-2.507	-2.843	-.508		
99.0	6.068	5.664	9.084	11.525	8.635	-2.397	-2.785	-.422		
NO. OF OBS	761	452	385	350	171	22	22	22		

TABLE 1c (cont'd). ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-11.186	-12.099	-11.479	-11.932	-12.400	-10.502	-9.134	-12.338
5.0	-7.539	-8.183	-7.877	-10.147	-11.238	-8.695	-8.546	-11.544
10.0	-6.636	-7.473	-5.861	-9.523	-10.162	-6.471	-8.101	-11.171
25.0	-3.617	-5.655	-3.485	-6.617	-8.806	-5.662	-7.529	-10.806
50.0	-1.144	-2.706	-1.363	-0.039	-5.515	-5.081	-7.114	-9.254
75.0	1.433	.333	1.410	2.751	1.946	-4.618	-6.301	-8.254
90.0	2.032	1.003	3.234	4.204	4.331	-4.178	-5.465	-7.804
95.0	2.691	1.458	4.420	4.657	5.251	-4.004	-5.295	-7.652
99.0	3.626	1.956	5.079	5.445	5.986	-3.865	-5.171	-7.392
NO. OF OBS	404	177	304	341	234	80	80	80

ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-11.938	-14.306	-14.519	-17.053	-16.693	-15.527	-15.072	-20.956
5.0	-8.665	-13.089	-13.729	-16.665	-16.106	-15.437	-14.641	-20.620
10.0	-7.039	-11.248	-12.974	-16.180	-15.372	-15.323	-14.136	-20.200
25.0	-3.180	-7.265	-11.771	-14.725	-13.171	-15.019	-13.630	-18.940
50.0	-0.910	-4.651	-5.912	-5.792	-9.502	-14.133	-12.653	-17.365
75.0	.198	-2.824	1.372	2.278	-5.833	-12.646	-11.306	-14.740
90.0	1.255	-1.847	2.347	3.533	.812	-12.079	-10.666	-14.005
95.0	1.718	-1.081	2.779	3.952	3.111	-11.760	-10.329	-13.480
99.0	2.270	-0.083	3.124	4.286	4.950	-11.413	-9.898	-12.808
NO. OF OBS	193	95	128	119	62	32	32	32

TABLE 1c (cont'd). ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-10.977	-11.352	-16.698	-16.539	-19.158	-16.012	-16.898
5.0	-10.047	-11.042	-15.082	-15.617	-18.498	-15.822	-16.569
10.0	-8.884	-10.654	-12.818	-14.917	-18.042	-15.584	-16.234
25.0	-6.065	-7.998	-10.628	-14.135	-16.864	-14.857	-15.615
50.0	-2.748	-5.270	-7.976	-11.125	-15.253	-13.548	-14.599
75.0	-8.839	-2.915	-4.336	-8.116	-9.999	-12.085	-12.705
90.0	.306	-6.609	-2.329	-5.668	-9.084	-9.967	-9.536
95.0	.688	.454	-6.679	-4.899	-7.426	-7.990	-8.077
99.0	.994	1.075	.099	-3.042	-6.007	-6.702	-7.249
NO. OF OBS	125	103	131	107	71	49	49

ALTITUDE 5 TO 10 (KM)
JAN. INITIAL WIND SPEED 70 TO 80 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.804	-7.921	-9.377	-8.905	-19.410	-8.884	-8.644
5.0	-5.422	-7.644	-8.045	-8.366	-19.052	-8.581	-8.378
10.0	-4.944	-7.299	-7.454	-7.693	-18.603	-8.202	-8.047
25.0	-3.377	-6.910	-6.545	-6.148	-17.258	-7.567	-7.491
50.0	-2.846	-6.478	-3.320	-4.345	-10.032	-6.899	-6.760
75.0	-2.315	-5.398	-8.809	-3.359	-6.312	-6.486	-6.097
90.0	-1.598	-4.131	-8.096	-2.641	-5.255	-6.219	-5.699
95.0	-1.359	-3.900	.142	-2.437	-4.902	-6.029	-5.473
99.0	-1.168	-3.716	.332	-2.167	-4.620	-5.878	-4.943
NO. OF OBS	16	16	33	33	33	17	17

12.0	-19.286	-19.032	-18.715	-17.752	-17.399	-16.548	-15.129	-14.755	-14.247
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TABLE 1d. ALTITUDE 10 TO 15 (KM)
JAN. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	11.057	1.684	9.703	9.315	12.303	.000	.000	.000		
5.0	11.643	2.142	10.199	9.879	12.544	.000	.000	.000		
10.0	11.864	2.714	10.820	10.392	12.741	.000	.000	.000		
25.0	12.238	4.429	11.767	11.727	13.567	.000	.000	.000		
50.0	13.323	12.923	15.445	14.807	15.190	.000	.000	.000		
75.0	15.858	16.129	17.136	16.974	17.796	.000	.000	.000		
90.0	17.600	18.561	18.339	19.314	18.686	.000	.000	.000		
95.0	18.215	19.970	19.121	20.402	18.961	.000	.000	.000		
99.0	18.977	21.098	20.027	21.932	19.242	.000	.000	.000		
NO. OF OBS	153	306	153	212	106	0	0	0		

ALTITUDE 10 TO 15 (KM)
JAN. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-12.077	-.927	-10.496	-1.225	.110	2.254	.000	.000		
5.0	-10.602	.169	-6.686	1.911	1.060	3.095	.000	.000		
10.0	-8.575	1.504	-4.281	3.113	2.135	3.274	.000	.000		
25.0	-3.986	2.862	2.110	5.120	4.813	3.846	.000	.000		
50.0	2.753	7.177	6.133	9.735	8.113	5.632	.000	.000		
75.0	8.231	9.370	9.859	11.877	11.067	6.961	.000	.000		
90.0	10.744	11.379	12.394	13.574	12.290	8.038	.000	.000		
95.0	12.405	13.388	13.648	14.796	12.846	8.534	.000	.000		
99.0	15.977	15.805	15.336	18.773	16.512	8.891	.000	.000		
NO. OF OBS	648	744	586	339	286	96	0	0		

TABLE 1d (cont'd). ALTITUDE 10 TO 15 (KM)

JAN. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-16.218	-6.331	-14.054	-5.298	-7.071	-5.443	.000	-5.215
5.0	-14.254	-3.840	-12.236	-4.319	-6.054	-4.936	.000	-5.117
10.0	-12.112	-3.065	-11.072	-3.805	-4.660	-4.264	.000	-4.994
25.0	-4.014	-1.733	-3.056	-2.532	-1.682	-3.508	.000	-4.538
50.0	-.436	.161	.240	-.471	.394	-1.608	.000	-3.885
75.0	1.448	1.750	2.349	1.792	2.306	1.125	.000	-3.680
90.0	3.366	3.605	4.117	3.636	5.030	3.438	.000	-3.291
95.0	4.830	4.629	5.476	4.781	7.081	4.507	.000	-3.085
99.0	11.071	7.240	7.764	5.537	8.645	6.102	.000	-2.921
NO. OF OBS	1736	1156	688	529	241	246	0	47

ALTITUDE 10 TO 15 (KM)

JAN. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-9.285	-6.489	-11.857	-10.478	9.093	-10.645	.000	-11.823
5.0	-4.621	-5.447	-11.366	-8.886	9.769	-8.477	.000	-11.074
10.0	-3.997	-4.436	-10.753	-7.022	10.022	-7.540	.000	-10.016
25.0	-2.123	-2.976	-4.942	-5.293	11.685	-5.832	.000	-5.721
50.0	.999	-1.175	-1.845	-2.704	13.180	-3.729	.000	-4.157
75.0	6.732	.499	.970	1.880	13.786	-1.665	.000	-1.512
90.0	11.203	2.056	3.456	13.014	14.277	.610	.000	1.652
95.0	12.811	3.669	5.784	14.617	14.453	3.249	.000	2.466
99.0	14.098	9.660	7.799	15.819	14.595	6.682	.000	3.706
NO. OF OBS	329	586	109	426	78	231	0	135

TABLE 1d (cont'd). ALTITUDE 10 TO 15 (KM)
JAN. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.199	-5.070	-10.018	-8.696	4.039	-11.339	-2.203	-11.624		
5.0	-3.133	-4.391	-5.049	-5.856	4.814	-10.974	-2.095	-11.082		
10.0	-2.458	-3.541	-2.462	-4.422	5.295	-10.517	-1.959	-10.403		
25.0	-2.621	-1.872	-3.303	.435	6.635	-9.440	-1.327	-8.368		
50.0	.896	.148	1.459	4.477	9.106	-8.299	-.875	-4.977		
75.0	3.196	3.222	3.276	7.304	12.402	-7.422	-.423	-.567		
90.0	7.425	11.815	5.302	9.950	14.649	-5.555	-.017	2.485		
95.0	9.254	13.702	7.579	11.777	14.908	-4.853	-.209	3.503		
99.0	13.052	15.212	9.856	14.714	15.118	-4.123	.426	4.317		
NO. OF OBS	481	261	250	268	89	39	12	30		

ALTITUDE 10 TO 15 (KM)
JAN. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-14.998	-17.044	-12.655	-7.364	-2.689	-13.817	-4.024	-3.175		
5.0	-12.871	-15.379	-11.211	-6.764	-1.849	-13.567	-3.882	-3.075		
10.0	-10.212	-13.298	-10.325	-5.690	-1.472	-13.253	-3.704	-2.950		
25.0	-2.078	-7.187	-9.580	-3.187	-.101	-12.000	-2.991	-2.576		
50.0	1.622	2.165	-3.951	-.015	1.545	-9.995	-1.789	-1.701		
75.0	4.926	11.071	-.280	4.823	3.911	-9.284	-1.032	-.702		
90.0	15.049	15.690	2.612	6.531	8.577	-8.658	-.587	1.171		
95.0	17.230	17.230	3.364	7.281	9.681	-8.449	-.454	1.796		
99.0	18.974	18.462	7.019	9.880	10.184	-8.282	-.347	2.295		
NO. OF OBS	312	170	166	137	74	20	20	20		

TABLE 1d (cont'd). ALTITUDE 10 TO 15 (KM)
JAN. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-16.017	-15.923	-14.762	-9.842	-3.146	-17.138	-4.199	-4.007		
5.0	-12.967	-14.774	-13.652	-7.930	-2.851	-16.890	-3.104	-3.040		
10.0	-8.349	-13.801	-13.014	-5.530	-2.481	-16.581	-2.860	-2.525		
25.0	-2.327	-5.450	-6.396	-1.242	-1.599	-15.652	-2.076	-1.476		
50.0	-.284	-1.583	-2.425	.362	2.184	-14.105	-1.285	-.658		
75.0	1.143	.709	.322	2.138	4.976	-5.135	-.522	.397		
90.0	3.358	3.783	4.079	5.789	7.329	-3.278	-.011	1.395		
95.0	6.401	6.870	6.624	7.476	8.372	-2.659	.160	1.622		
99.0	14.148	13.756	9.265	8.681	9.455	-2.164	.296	1.804		
NO. OF OBS	346	232	198	128	82	49	49	49		

ALTITUDE 10 TO 15 (KM)
JAN. INITIAL WIND SPEED 70 TO 80 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-19.258	-17.896	-17.779	-17.278	-19.169	-19.118	-11.901	-15.834		
5.0	-17.577	-17.135	-16.636	-11.290	-14.079	-18.589	-11.097	-14.528		
10.0	-14.742	-16.042	-13.625	-9.956	-11.127	-18.049	-10.115	-13.516		
25.0	-3.613	-9.273	-8.449	-6.668	-7.730	-15.409	-7.627	-10.983		
50.0	-1.342	-3.030	-3.221	-3.450	-4.357	-6.999	-3.496	-8.517		
75.0	-.337	-.660	-.747	-.026	.012	-5.128	1.456	-.013		
90.0	.547	.856	1.619	1.880	2.502	-3.682	2.305	1.517		
95.0	1.431	1.513	3.548	3.414	3.622	-3.021	2.600	2.278		
99.0	2.410	2.603	5.791	5.412	4.859	-2.175	3.184	2.888		
NO. OF OBS	395	345	450	361	244	119	119	119		

TABLE 1e. ALTITUDE 15 TO 20 (KM)
JAN. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-6.319	-3.479	-6.317	-2.257	-1.411	-3.736	-2.776
5.0	-4.323	-1.329	-2.821	-1.490	-1.014	-2.671	-2.672
10.0	-2.517	-.634	-1.653	-.777	-.726	-2.278	-2.559
25.0	-.500	.334	-.096	.170	-.169	-1.322	-2.119
50.0	.595	1.586	2.081	1.595	.601	.049	-1.361
75.0	2.776	6.905	6.680	8.633	7.157	.476	-.681
90.0	8.146	13.234	12.811	15.957	13.327	2.115	-.241
95.0	11.209	15.090	15.212	17.398	15.383	2.667	-.121
99.0	16.323	17.269	18.280	18.925	17.080	3.128	-.024
NO. OF OBS	1715	1712	1098	966	471	209	31
							84

ALTITUDE 15 TO 20 (KM)
JAN. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-14.778	-8.811	-14.057	-5.714	-5.635	-7.624	-5.577
5.0	-12.028	-6.953	-12.762	-4.549	-4.678	-6.847	-5.487
10.0	-9.917	-5.218	-10.224	-3.869	-3.808	-6.076	-5.374
25.0	-3.751	-1.623	-4.426	-1.378	-1.471	-4.060	-4.960
50.0	.961	2.318	1.191	2.468	.548	.455	-4.245
75.0	3.119	4.853	5.494	5.173	4.231	4.695	-3.530
90.0	6.905	7.826	7.768	8.109	6.185	7.055	-3.116
95.0	9.199	12.771	8.896	9.084	6.744	7.964	-3.003
99.0	12.162	18.078	11.237	10.168	7.863	9.908	-2.913
NO. OF OBS	1315	958	699	631	333	266	30
							104

TABLE 1e (cont'd). ALTITUDE 15 TO 20 (KM)
JAN. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-17.633	-15.397	-17.156	-7.932	-7.574	-11.687	-8.476	-5.210		
5.0	-15.410	-13.584	-15.563	-7.137	-5.866	-10.836	-8.379	-3.931		
10.0	-12.723	-11.317	-14.281	-6.443	-2.683	-9.844	-8.258	-2.483		
25.0	-4.362	-5.484	-7.880	-4.618	-4.400	-5.446	-7.817	-2.242		
50.0	-0.308	-1.573	-4.788	-1.319	1.651	-2.992	-7.134	3.762		
75.0	3.470	2.338	1.024	1.143	3.183	.111	-6.373	5.340		
90.0	8.787	11.803	2.575	4.796	7.721	2.318	-5.932	6.071		
95.0	14.092	17.936	2.984	6.789	8.594	3.401	-5.811	4.317		
99.0	17.103	22.451	4.173	8.009	9.279	6.764	-5.714	7.860		
NO. OF OBS	777	584	297	393	188	165	31	70		

ALTITUDE 15 TO 20 (KM)
JAN. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-18.169	-15.886	-13.549	-9.323	3.395	-15.717	-11.278	-10.988		
5.0	-17.031	-14.950	-12.958	-9.016	3.534	-15.305	-11.187	-10.502		
10.0	-14.773	-13.779	-12.241	-8.631	3.708	-14.789	-11.075	-9.894		
25.0	-1.681	-11.661	-9.918	-7.478	4.230	-13.193	-10.663	-8.070		
50.0	1.281	-2.622	-7.081	-4.895	6.744	-7.806	-9.950	-5.030		
75.0	6.423	6.034	-1.633	-1.223	8.685	-5.873	-9.238	3.867		
90.0	8.265	13.901	2.715	6.937	9.468	-4.713	-8.825	5.833		
95.0	14.719	15.035	3.017	7.923	9.729	-3.909	-8.713	6.481		
99.0	17.929	17.002	3.259	8.713	9.938	-2.878	-8.622	7.000		
NO. OF OBS	319	302	192	194	63	82	30	64		

TABLE 1e (cont'd). ALTITUDE 15 TO 20 (KM)
JAN. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-22.343	-18.070	-16.920	-10.873	-7.530	-21.183	-15.865	-3.637
5.0	-21.355	-17.709	-16.119	-10.524	-6.969	-20.501	-15.101	-3.346
10.0	-20.120	-17.257	-15.117	-10.087	-5.915	-20.033	-14.485	-2.669
25.0	-15.152	-16.000	-11.156	-5.270	-1.018	-18.217	-12.828	-1.368
50.0	-0.395	-10.637	-3.096	-1.021	3.976	-16.774	-11.667	1.755
75.0	4.744	-2.297	1.830	5.370	5.310	-13.696	-6.879	3.837
90.0	7.621	.649	4.905	7.346	7.164	-11.740	-4.622	5.139
95.0	8.855	4.619	5.740	8.333	8.341	-11.038	-3.522	5.594
99.0	9.683	8.026	6.484	9.451	9.260	-9.092	-1.716	6.336
NO. OF OBS	165	135	197	135	103	70	70	70

ALTITUDE 15 TO 20 (KM)
JAN. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-20.871	-21.343	-18.838	-12.015	-4.273	-13.767	-6.895	1.236
5.0	-19.797	-20.874	-18.390	-11.596	-4.085	-13.717	-6.836	1.262
10.0	-18.453	-20.288	-17.830	-11.072	-3.851	-13.654	-6.762	1.295
25.0	-14.423	-18.529	-15.990	-9.499	-3.147	-13.464	-6.540	1.392
50.0	-1.529	-11.644	-12.038	-6.878	-1.974	-13.149	-6.170	1.553
75.0	1.976	-0.232	-4.451	-2.586	.540	-12.833	-5.800	1.715
90.0	4.078	2.133	-1.174	1.308	3.699	-11.697	-4.468	2.006
95.0	4.779	2.922	2.939	4.663	4.550	-11.319	-4.024	2.103
99.0	5.340	3.552	4.732	7.389	5.230	-11.016	-3.669	2.181
NO. OF OBS	109	109	117	81	42	8	8	8

TABLE 2a.
FEB. ALTITUDE .2 TO 1 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-8.354	-6.252	-6.762	-5.192	-6.394	-5.284	10.5
5.0	-5.190	-3.621	-5.034	-4.203	-4.231	-1.745	-5.693
10.0	-2.749	-2.600	-3.129	-2.483	-3.148	-0.833	-4.101
25.0	-1.057	-1.163	-1.067	-0.196	-1.077	.152	-1.932
50.0	.411	.356	.486	1.387	1.089	1.555	-0.008
75.0	1.921	2.303	2.390	3.226	3.336	3.822	1.191
90.0	6.479	7.091	5.366	5.318	5.589	6.961	4.210
95.0	8.052	9.305	8.159	6.936	7.119	9.445	10.765
99.0	9.306	13.055	11.450	8.820	9.624	10.337	12.798
							15.080
NO. OF OBS	1253	1258	856	723	652	283	224
							129

ALTITUDE .2 TO 1 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-7.238	-8.414	-7.233	-12.268	-8.268	-10.763	10.5
5.0	-6.540	-7.150	-6.301	-11.261	-6.963	-10.214	-8.216
10.0	-5.914	-5.570	-5.877	-10.032	-6.273	-9.528	-7.725
25.0	-3.670	-4.132	-4.877	-7.141	-5.119	-7.723	-7.189
50.0	-1.600	-2.018	-3.595	-4.334	-3.875	-4.853	-6.393
75.0	1.662	-0.013	1.216	-0.936	-1.347	-1.471	-5.540
90.0	3.728	1.188	4.600	1.330	2.707	6.531	-4.914
95.0	4.832	3.227	7.839	7.920	3.746	7.325	-4.134
99.0	5.359	7.229	10.000	10.136	4.213	7.961	-3.919
							-3.784
NO. OF OBS	196	177	169	179	127	127	63
							35

TABLE 2b. ALTITUDE 1 TO 5 (KM)
FEB. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.193	-5.073	-4.509	-4.788	-5.221	-4.183	-5.504
5.0	-2.737	-2.522	-2.328	-3.059	-3.619	-2.859	-3.999
10.0	-1.736	-1.802	-1.821	-2.109	-2.407	-2.066	-2.445
25.0	-.742	-.645	-.703	-1.075	-1.178	-1.083	-1.374
50.0	.125	.439	.935	.581	.777	.311	.412
75.0	1.173	2.411	4.554	4.698	5.024	1.809	6.883
90.0	5.482	8.248	11.986	10.257	11.841	8.396	15.810
95.0	10.269	11.270	16.163	12.796	13.527	11.727	16.720
99.0	18.515	19.198	21.673	20.482	20.410	12.968	17.448
NO. OF OBS	2215	2190	1613	1448	1284	486	336
							157

ALTITUDE 1 TO 5 (KM)
FEB. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-12.548	-12.939	-7.764	-8.880	-8.337	-10.612	-13.386
5.0	-5.234	-6.103	-6.076	-6.278	-6.401	-8.757	-8.872
10.0	-3.745	-4.264	-4.743	-4.633	-4.631	-6.681	-5.917
25.0	-1.987	-1.855	-2.490	-1.269	-2.066	-2.963	-3.673
50.0	-.093	.183	.478	1.704	1.498	3.492	2.178
75.0	1.874	2.944	2.950	5.606	5.028	5.975	6.708
90.0	4.550	5.525	6.250	8.101	7.266	7.285	10.049
95.0	7.000	9.394	8.808	9.690	9.431	9.214	11.253
99.0	8.914	12.436	18.004	14.237	14.536	11.077	12.459
NO. OF OBS	1894	2040	1436	1278	1221	619	409
							349

TABLE 2b (cont'd). ALTITUDE 1 TO 5 (KM)
FEB. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-19.734	-20.403	-8.978	-13.175	-11.479	-11.938	-12.576
5.0	-7.394	-10.183	-7.327	-9.531	-10.244	-10.103	-11.589
10.0	-5.360	-6.061	-6.362	-7.661	-8.422	-9.294	-10.873
25.0	-2.694	-3.659	-4.477	-3.800	-5.456	-6.376	-7.664
50.0	-0.350	-1.169	-1.131	-1.613	-2.764	-3.584	-4.338
75.0	2.187	1.743	1.637	1.056	1.638	-0.738	-2.619
90.0	3.759	3.845	4.363	4.445	5.173	3.367	1.212
95.0	4.284	4.748	5.970	5.737	6.434	7.361	1.887
99.0	7.321	6.588	7.842	8.139	8.446	9.368	3.253
NO. OF OBS	1412	1173	778	624	403	363	289
							100

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.121	-7.362	-10.188	-13.106	-8.837	-11.933	-16.096
5.0	-5.130	-6.989	-9.811	-12.652	-8.346	-11.625	-15.372
10.0	-4.681	-6.661	-9.369	-12.082	-7.741	-10.915	-14.811
25.0	-3.627	-5.686	-8.614	-8.230	-6.843	-10.154	-12.321
50.0	-2.343	-3.892	-4.703	-4.107	-6.090	-8.848	-10.644
75.0	.511	-1.145	-2.050	-2.905	-5.184	-7.794	-9.389
90.0	2.917	1.574	-0.437	-1.245	-1.526	-5.664	-5.974
95.0	3.915	2.580	-0.115	-0.677	-0.425	-4.199	-5.600
99.0	5.046	3.837	0.238	-0.055	0.173	-2.921	-4.934
NO. OF OBS	211	184	158	142	104	104	58
							21

TABLE 2b (cont'd). ALTITUDE 1 TO 5 (KM)
 FEB. INITIAL WIND SPEED 40 TO 50 M/SEC
 WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-11.184	-8.898	-7.870	-12.724	-13.939	-16.882	-19.026	-18.911		
5.0	-10.521	-8.848	-7.391	-11.821	-13.494	-16.010	-18.689	-18.833		
10.0	-9.692	-8.785	-6.793	-10.692	-12.620	-14.919	-18.028	-18.736		
25.0	-7.798	-8.599	-5.495	-9.456	-11.269	-13.595	-17.307	-18.260		
50.0	-4.719	-8.207	-4.996	-6.701	-10.305	-12.329	-16.105	-17.292		
75.0	-0.561	-7.616	-3.948	-5.155	-9.581	-11.648	-14.131	-16.939		
90.0	0.650	-7.108	-3.499	-4.456	-8.807	-11.103	-13.770	-16.637		
95.0	1.755	-6.859	-3.350	-4.268	-8.012	-10.921	-13.341	-16.444		
99.0	2.639	-6.660	-3.230	-4.118	-7.122	-10.308	-12.668	-16.289		
NO. OF OBS	28	13	15	28	28	28	28	13		

TABLE 2c.
FEB. ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 5 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-2.557	-3.129	-2.667	-2.589	-3.148	-4.051	12.0
5.0	-1.745	-2.203	-1.813	-1.906	-2.459	-3.471	.000
10.0	-1.730	-1.047	-1.745	-1.052	-1.598	-2.629	.000
25.0	2.316	2.423	2.457	1.510	.985	-.790	.000
50.0	7.391	8.206	7.795	5.781	5.290	.971	.000
75.0	12.467	13.989	25.884	10.051	9.595	2.848	.000
90.0	15.765	22.351	33.766	29.079	28.731	3.341	.000
95.0	24.743	29.346	36.393	33.540	32.600	3.721	.000
99.0	31.925	34.941	38.495	37.108	35.696	4.276	.000
NO. OF OBS	1132	895	775	650	531	255	122
							0

FEB. ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-3.877	-4.689	-4.617	-4.941	-3.066	-2.707	12.0
5.0	-2.866	-3.686	-3.525	-3.984	-2.132	-1.893	1.463
10.0	-1.602	-2.432	-2.160	-2.787	-.965	-1.037	1.795
25.0	2.190	1.330	1.935	.802	2.538	-.391	2.210
50.0	8.509	7.600	8.759	6.784	8.376	.685	3.455
75.0	14.829	13.869	15.584	12.766	14.214	2.857	5.530
90.0	18.620	17.631	27.309	16.668	20.067	5.630	8.317
95.0	29.369	25.470	33.709	27.239	29.049	8.236	10.611
99.0	39.266	38.374	38.830	35.696	36.234	9.567	11.375
NO. OF OBS	917	1012	751	659	678	200	11.987
							54

TABLE 2c (cont'd). ALTITUDE 5 TO 10 (KM)
FEB. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-19.863	-18.249	-5.703	-3.536	-3.994	-3.360	-3.232
5.0	-11.326	-7.169	-4.268	-2.500	-2.666	-2.802	-2.266
10.0	-6.369	-2.510	-3.195	-1.760	-1.754	-2.292	-1.741
25.0	-0.746	-0.597	-1.193	.437	-0.692	-1.483	-0.212
50.0	2.813	2.592	.832	1.947	1.114	2.827	1.679
75.0	6.371	5.781	2.739	3.813	3.047	5.946	5.925
90.0	8.507	7.694	5.043	5.703	6.379	9.497	9.162
95.0	9.218	8.332	6.490	8.252	8.939	10.647	10.777
99.0	9.788	8.842	7.315	10.342	11.051	11.009	11.481
NO. OF OBS	1127	1410	935	828	734	269	211
							183

ALTITUDE 5 TO 10 (KM)
FEB. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-26.663	-28.359	-8.972	-6.879	-9.245	-10.848	-7.421
5.0	-9.706	-16.416	-7.136	-5.730	-5.550	-5.511	-5.464
10.0	-4.217	-6.026	-5.004	-4.293	-4.639	-4.391	-3.750
25.0	-1.969	-2.827	-2.209	-2.750	-3.054	-3.188	-2.564
50.0	1.444	.892	-0.267	-0.530	-0.146	-0.179	-0.302
75.0	4.857	4.611	1.799	1.597	2.609	3.479	1.749
90.0	6.905	6.842	4.888	4.227	5.676	7.806	8.476
95.0	7.587	7.586	5.972	6.672	7.424	9.325	9.593
99.0	8.133	8.181	7.086	9.541	9.731	10.299	10.564
NO. OF OBS	1732	1514	1053	904	895	431	403
							237

TABLE 2c (cont'd).
FEB. ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-34.057	-35.822	-11.204	-15.024	-16.488	-19.883	-22.431
5.0	-24.806	-26.148	-10.185	-12.959	-15.140	-17.760	-20.234
10.0	-6.467	-14.713	-9.242	-11.236	-11.188	-15.276	-17.489
25.0	-4.054	-4.506	-5.252	-5.126	-8.835	-9.893	-13.313
50.0	-0.33	.076	-2.808	-2.584	-7.754	-2.794	-1.626
75.0	3.989	4.658	.164	.130	3.507	-2.223	3.402
90.0	6.401	7.407	3.379	4.676	6.764	3.419	6.491
95.0	7.206	8.324	5.041	6.737	7.379	4.486	7.520
99.0	7.849	9.057	7.340	7.799	8.259	8.225	8.344
NO. OF OBS	1282	1253	732	629	386	345	209
							179

ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-35.416	-35.866	-15.325	-18.785	-20.288	-23.289	-22.562
5.0	-21.400	-27.609	-13.975	-17.280	-19.838	-22.055	-22.138
10.0	-16.144	-21.869	-12.984	-15.847	-19.277	-21.514	-21.625
25.0	-12.640	-14.723	-11.659	-14.438	-17.592	-20.272	-20.577
50.0	-6.800	-5.704	-7.959	-11.395	-14.785	-18.559	-19.489
75.0	-0.960	.213	2.303	3.095	-7.002	-16.692	-17.893
90.0	2.544	3.763	3.899	4.721	5.184	-14.354	-16.991
95.0	3.712	4.947	4.895	5.611	6.612	-13.482	-16.552
99.0	4.646	5.893	6.201	6.608	7.754	-12.427	-16.276
NO. OF OBS	576	506	358	297	231	155	90
							31

TABLE 2c (cont'd). ALTITUDE 5 TO 10 (KM)
FEB. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-6.670	-11.436	-16.727	-21.381	-18.614	-23.856	-22.533
5.0	-6.072	-10.695	-15.927	-20.644	-18.068	-23.077	-22.040
10.0	-5.618	-10.127	-15.152	-20.055	-17.435	-22.532	-21.511
25.0	-4.390	-8.781	-13.890	-16.179	-15.616	-19.168	-20.684
50.0	-1.321	-4.641	-9.247	-10.107	-11.290	-15.366	-19.534
75.0	.990	-4.466	-1.983	-5.696	-9.179	-13.550	-17.393
90.0	2.463	1.350	-7.714	-2.700	-8.022	-12.080	-14.881
95.0	2.937	2.059	-0.024	-2.210	-7.346	-10.439	-14.164
99.0	3.862	3.005	2.663	-1.205	-5.937	-9.587	-13.307
NO. OF OBS	404	343	359	366	278	278	203
							86

ALTITUDE 5 TO 10 (KM)
FEB. INITIAL WIND SPEED 70 TO 80 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.098	-5.168	-10.734	-15.449	-19.049	-25.280	-18.524
5.0	-4.839	-4.752	-10.631	-15.167	-18.647	-24.798	-18.419
10.0	-4.634	-4.521	-10.501	-14.814	-18.143	-24.196	-18.201
25.0	-4.042	-4.073	-10.224	-13.756	-16.633	-22.390	-17.808
50.0	-3.542	-3.120	-9.785	-10.895	-14.116	-19.379	-17.394
75.0	-2.750	-1.516	-8.398	-4.838	-11.134	-15.813	-17.197
90.0	-2.267	-2.277	-7.383	-3.411	-9.272	-13.585	-16.805
95.0	-2.040	.397	-7.126	-2.936	-8.651	-12.843	-16.717
99.0	-1.712	1.288	-6.953	-2.555	-8.154	-12.249	-16.647
NO. OF OBS	30	67	37	67	67	67	30
							30

TABLE 2d. ALTITUDE 10 TO 15 (KM)
FEB. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.378	-4.696	-4.754	-3.320	-0.591	-2.027	-0.851	0.000		
5.0	-3.369	-2.959	-3.928	-2.598	-0.037	-1.455	-0.615	0.000		
10.0	-2.108	-0.909	-2.896	-1.696	0.656	-0.740	-0.321	0.000		
25.0	1.675	1.440	0.201	1.009	2.736	1.137	1.171	0.000		
50.0	7.981	6.674	5.954	5.519	6.380	4.091	3.701	0.000		
75.0	14.286	21.867	28.664	12.437	17.328	9.294	12.667	0.000		
90.0	18.070	25.559	39.277	34.855	35.987	13.335	14.990	0.000		
95.0	27.738	33.467	42.154	38.319	37.944	14.431	15.626	0.000		
99.0	38.836	42.322	44.455	41.056	39.509	15.766	16.333	0.000		
NO. OF OBS	528	690	351	307	260	137	69	0		

TABLE 2d (cont'd). ALTITUDE 10 TO 15 (KM)
FEB. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-3.812	-2.896	-5.297	-2.090	.632	.335	1.255
5.0	-2.618	-1.803	-2.495	1.469	1.726	1.308	1.555
10.0	-1.233	-1.016	.673	2.517	2.597	1.770	1.929
25.0	-.144	1.690	3.062	3.890	3.957	2.901	2.819
50.0	1.719	4.839	7.883	5.766	5.963	4.381	4.457
75.0	4.637	12.414	18.974	14.599	9.552	5.953	5.604
90.0	20.696	20.104	23.920	23.041	14.330	8.327	9.045
95.0	23.733	24.004	26.857	24.274	15.881	10.913	10.520
99.0	26.953	27.592	29.731	26.815	21.726	12.760	12.126
NO. OF OBS	651	659	469	413	292	133	64
							0

ALTITUDE 10 TO 15 (KM)
FEB. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-9.254	-22.566	-22.191	-5.356	-3.962	-.365	10.5
5.0	-3.395	-18.731	-18.427	-3.520	-2.190	.036	-1.627
10.0	-1.549	-16.336	-14.541	-1.527	-1.162	.512	.085
25.0	-.359	-2.691	-.856	.593	.826	1.753	.715
50.0	.601	.534	2.056	2.613	3.796	3.780	2.247
75.0	2.422	2.889	6.469	5.847	7.241	7.983	4.613
90.0	11.347	12.677	13.639	12.627	11.050	9.123	8.457
95.0	16.083	16.690	16.275	15.720	13.568	10.673	10.042
99.0	23.507	25.021	22.689	22.406	16.955	14.261	12.014
NO. OF OBS	1448	1202	1107	1104	988	290	14.247
							157

TABLE 2d (cont'd). ALTITUDE 10 TO 15 (KM)
FEB. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-29.557	-32.799	-19.644	-22.448	-7.447	-6.586	-12.320
5.0	-12.926	-16.555	-7.633	-17.274	-3.500	-5.051	-3.916
10.0	-8.348	-12.987	-5.343	-9.308	-1.795	-2.544	-1.055
25.0	-2.631	-4.320	-2.042	-4.468	1.528	1.983	1.207
50.0	.039	-1.036	1.191	2.467	4.619	4.591	4.332
75.0	2.710	1.735	4.407	5.845	7.464	7.293	8.780
90.0	4.379	3.740	7.281	9.678	11.942	10.218	12.487
95.0	8.255	5.254	8.490	13.036	14.411	11.417	14.018
99.0	11.355	9.188	12.037	16.303	17.377	12.922	15.244
NO. OF OBS	1703	1596	1128	997	994	576	405

330

ALTITUDE 10 TO 15 (KM)
FEB. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-34.795	-33.881	-18.189	-26.324	-10.470	-19.371	-21.341
5.0	-9.975	-16.906	-14.548	-22.120	-8.842	-18.536	-20.305
10.0	-7.200	-12.134	-9.129	-17.186	-7.292	-17.492	-18.317
25.0	-4.011	-6.381	-5.146	-5.968	-4.206	-7.589	-11.511
50.0	-1.577	-2.044	-2.044	-1.274	-0.637	-3.085	-1.602
75.0	1.141	.877	.360	2.967	2.343	1.363	1.788
90.0	2.856	4.822	4.562	10.389	7.337	4.935	8.172
95.0	3.428	7.033	9.175	12.349	12.859	10.208	11.372
99.0	7.510	11.781	17.124	21.001	19.951	12.370	12.546
NO. OF OBS	1428	1213	785	569	480	311	243

160

TABLE 2d (cont'd). ALTITUDE 10 TO 15 (KM)
FEB. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-14.404	-17.402	-18.491	-19.691	-16.473	-22.064	-22.024
5.0	-6.261	-11.102	-16.175	-17.836	-14.065	-19.357	-20.774
10.0	-5.196	-8.617	-14.307	-14.130	-11.331	-18.086	-19.691
25.0	-2.932	-3.955	-6.834	-5.150	-5.683	-13.198	-17.566
50.0	-6.61	-2.236	-1.623	-1.042	-2.290	-5.450	-7.401
75.0	1.469	2.174	1.518	3.515	1.784	.223	.283
90.0	3.554	4.833	5.995	7.199	5.027	4.889	6.167
95.0	4.807	6.996	7.993	9.017	7.874	6.622	7.796
99.0	7.292	11.151	13.798	11.841	10.228	9.169	9.235
NO. OF OBS	1127	1303	934	783	585	387	295
							100

ALTITUDE 10 TO 15 (KM)
FEB. INITIAL WIND SPEED 70 TO 80 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.495	-10.244	-19.007	-21.544	-18.648	-24.122	-22.921
5.0	-6.183	-8.075	-14.548	-18.548	-17.696	-23.412	-20.889
10.0	-4.760	-6.947	-12.274	-14.343	-16.613	-22.631	-20.124
25.0	-2.716	-3.981	-7.593	-11.517	-13.255	-19.410	-16.744
50.0	-5.590	-1.027	-4.602	-4.764	-8.742	-15.959	-17.313
75.0	1.254	.848	-1.312	-2.220	-5.758	-11.596	-15.410
90.0	3.263	4.575	4.942	.385	-3.657	-9.967	-13.378
95.0	4.432	6.027	6.337	5.304	-1.230	-9.329	-13.071
99.0	6.095	7.057	7.987	6.165	1.424	-8.124	-11.839
NO. OF OBS	315	337	226	227	201	166	100
							53

TABLE 2e. ALTITUDE 15 TO 20 (KM)
FEB. INITIAL WIND SPEED 3 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-4.458	-5.363	-5.169	-5.470	-4.581	-5.540	-4.752	-4.248
5.0	-2.277	-3.183	-3.402	-3.970	-3.442	-4.022	-3.703	-3.801
10.0	-1.651	-1.840	-2.674	-2.540	-2.627	-3.104	-3.050	-3.242
25.0	-.606	-.741	-1.225	-1.109	-1.195	-1.948	-1.986	-1.566
50.0	.281	.121	.052	.002	-.202	-.296	-.753	.482
75.0	1.206	2.409	1.278	1.219	.682	.503	.047	1.966
90.0	2.414	10.954	2.753	4.682	1.962	3.004	2.256	4.689
95.0	3.373	14.841	4.603	8.065	2.604	4.280	3.393	5.630
99.0	6.890	19.225	11.684	15.163	4.194	6.711	4.335	6.302
NO. OF OBS	1902	2003	1317	1154	938	482	290	161

ALTITUDE 15 TO 20 (KM)
FEB. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-10.886	-12.471	-11.225	-10.196	-9.944	-8.845	-10.720	-8.599
5.0	-5.488	-8.419	-7.429	-8.089	-6.515	-7.925	-8.948	-8.153
10.0	-4.337	-6.607	-5.612	-6.639	-5.501	-7.136	-7.502	-7.596
25.0	-2.530	-2.735	-3.541	-3.336	-3.170	-5.326	-4.926	-5.924
50.0	1.155	-.536	1.124	1.044	-.467	.062	-3.119	1.131
75.0	3.004	3.270	3.910	5.529	3.699	5.928	3.408	8.192
90.0	5.243	12.280	8.839	14.618	6.880	10.090	7.618	10.171
95.0	9.375	19.631	18.176	21.937	8.161	11.695	8.674	10.830
99.0	15.926	21.618	23.337	25.029	10.578	13.979	10.431	11.358
NO. OF OBS	1688	1672	1215	1080	924	472	304	160

TABLE 2e (cont'd).

		ALTITUDE 15 TO 20 (KM)									
FEB.		INITIAL WIND SPEED 20 TO 30 M/SEC									
		WIND SPEED CHANGE VALUES(M/SEC)									
PERCENT LEVELS		Time Differences (Hours)									
		1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-9.876	-18.992	-20.409	-15.736	-8.888	-11.553	-13.977	-13.977	-12.173		
5.0	-8.419	-13.396	-13.361	-8.607	-6.925	-10.009	-13.124	-13.124	-11.187		
10.0	-6.597	-8.921	-7.959	-7.216	-5.666	-8.983	-12.059	-12.059	-9.954		
25.0	-3.271	-4.642	-4.871	-3.681	-3.837	-5.483	-6.836	-6.836	-6.255		
50.0	-0.223	-0.422	.009	.510	.360	.910	-3.205	-3.205	1.248		
75.0	3.408	3.458	4.253	5.374	5.350	5.901	4.347	4.347	10.425		
90.0	6.071	7.581	8.769	7.912	9.126	13.457	10.717	10.717	14.994		
95.0	6.958	10.556	11.254	10.751	11.539	15.650	11.743	11.743	16.517		
99.0	14.191	21.364	22.710	26.321	13.392	16.758	14.383	14.383	17.735		
NO. OF OBS	1539	1419	1061	973	817	416	255	255	153		

		ALTITUDE 15 TO 20 (KM)									
FEB.		INITIAL WIND SPEED 30 TO 40 M/SEC									
		WIND SPEED CHANGE VALUES(M/SEC)									
PERCENT LEVELS		Time Differences (Hours)									
		1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-15.459	-23.279	-25.800	-18.558	-12.981	-15.837	-19.296	-19.296	-19.281		
5.0	-9.318	-14.489	-19.671	-15.520	-9.515	-14.340	-17.948	-17.948	-18.164		
10.0	-8.384	-10.734	-12.339	-14.041	-8.167	-12.877	-13.960	-13.960	-16.768		
25.0	-4.492	-5.349	-6.940	-7.637	-5.752	-9.049	-9.459	-9.459	-10.856		
50.0	-0.372	-1.420	-1.245	-2.622	-2.024	.216	-1.139	-1.139	-0.888		
75.0	2.498	2.826	3.463	3.060	2.238	5.551	5.360	5.360	7.273		
90.0	4.356	6.411	5.976	6.673	7.408	10.458	8.618	8.618	10.232		
95.0	5.237	6.529	7.579	9.858	9.951	13.202	9.331	9.331	11.846		
99.0	7.011	13.368	10.772	12.456	13.789	16.007	13.128	13.128	13.137		
NO. OF OBS	1206	1221	885	727	702	346	305	305	219		

TABLE 2e (cont'd). ALTITUDE 15 TO 20 (KM)
FEB. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-14.925	-19.403	-16.577	-18.073	-17.527	-20.457	-22.961	-22.761
5.0	-11.460	-16.008	-15.525	-13.524	-11.946	-19.373	-21.810	-22.087
10.0	-9.227	-9.257	-13.709	-12.238	-10.573	-18.520	-20.939	-21.243
25.0	-4.071	-6.224	-9.021	-8.832	-8.107	-13.359	-17.966	-18.713
50.0	-1.131	-2.412	-4.499	-4.529	-5.366	-7.996	-11.227	-14.452
75.0	.863	.147	-1.260	-1.188	-2.444	-2.881	-4.223	-9.632
90.0	2.617	2.937	.901	1.932	-.689	.786	-.273	-6.740
95.0	3.417	4.893	2.311	6.596	.460	1.176	4.764	4.770
99.0	4.829	8.992	8.037	9.848	4.239	4.385	6.521	8.626
NO. OF OBS	810	630	474	406	348	224	194	83

ALTITUDE 15 TO 20 (KM)
FEB. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-8.787	-17.887	-12.134	-11.140	-18.153	-22.743	-23.490	-23.047
5.0	-7.773	-14.233	-11.710	-10.741	-17.247	-22.235	-21.968	-22.917
10.0	-5.238	-11.326	-10.384	-10.366	-14.311	-21.600	-19.968	-22.753
25.0	-3.821	-7.689	-8.926	-8.867	-12.178	-19.695	-14.724	-22.468
50.0	-2.673	-4.949	-7.379	-6.994	-9.147	-5.855	-10.643	-21.447
75.0	-1.263	-1.984	-4.949	-4.497	-6.468	-1.756	-2.376	-20.427
90.0	.144	-.116	-3.861	-2.499	-3.259	.054	.155	-19.570
95.0	.753	.507	-3.490	-1.916	-1.265	.657	.947	-19.080
99.0	1.767	1.005	-3.066	-1.400	.392	1.139	1.581	-18.688
NO. OF OBS	55	55	48	60	71	60	52	24

TABLE 3a. ALTITUDE .2 TO 1 (KM)
MAR. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-6.901	-6.025	-5.899	-4.606	-4.198	-6.647	-3.019
5.0	-4.800	-4.021	-5.421	-3.778	-3.194	-6.197	-2.214
10.0	-2.873	-3.374	-4.527	-3.382	-2.688	-5.072	-1.682
25.0	-1.016	-1.784	-2.907	-1.795	-0.755	-2.938	-0.880
50.0	.489	.121	-0.815	-0.185	.430	-0.846	.438
75.0	1.776	1.409	.889	1.867	1.416	3.635	3.055
90.0	2.860	2.959	2.470	4.069	4.991	6.129	6.753
95.0	4.131	6.200	2.916	4.849	5.902	6.819	8.220
99.0	6.512	9.089	3.472	5.402	7.664	7.632	9.832
NO. OF OBS	474	342	229	255	139	110	192
							69

ALTITUDE 0 TO 1 (KM)
MAR. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.717	-5.983	-6.560	-5.101	-6.656	-7.094	-2.807
5.0	-7.251	-5.873	-6.359	-5.025	-6.434	-6.468	-2.756
10.0	-6.196	-5.737	-5.951	-4.929	-6.275	-5.866	-2.692
25.0	-5.156	-5.327	-4.920	-4.643	-5.638	-4.813	-2.501
50.0	-2.446	-4.746	-4.222	-4.200	-5.034	-4.422	-1.614
75.0	-1.105	-3.330	-2.854	-3.152	-4.588	-4.031	-1.432
90.0	.385	-2.106	-1.306	-2.701	-4.217	-3.796	-1.323
95.0	.651	-1.833	-1.046	-2.472	-4.079	-3.718	-1.286
99.0	1.004	-1.615	-0.571	-2.014	-3.952	-3.656	-1.257
NO. OF OBS	100	27	58	32	25	13	13
							13

TABLE 3b.
MAR. ALTITUDE 1 TO 5 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-2.724	-4.987	-4.267	-4.099	-3.190
5.0	-1.865	-3.462	-2.443	-3.454	-2.313
10.0	-1.261	-2.716	-1.636	-1.952	-1.669
25.0	-0.576	-1.053	-0.711	-0.597	-0.874
50.0	0.016	-0.312	0.632	0.544	1.343
75.0	0.718	0.927	2.426	3.766	2.932
90.0	1.448	8.198	7.940	8.100	4.885
95.0	2.413	10.220	9.823	9.548	5.613
99.0	6.690	11.046	10.453	10.421	6.490
NO. OF OBS	453	354	307	323	161
					55
					149
					34
					12.0
					-3.846
					-3.508
					-3.087
					-0.457
					4.008
					4.504
					4.802
					4.901
					4.980

MAR. ALTITUDE 1 TO 5 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-5.164	-3.565	-5.490	-6.579	-7.271
5.0	-3.854	-2.884	-4.094	-5.130	-5.804
10.0	-2.905	-2.414	-3.593	-4.264	-5.151
25.0	-1.382	-1.113	-1.738	-2.812	-3.804
50.0	-0.185	0.619	0.538	0.277	-1.086
75.0	0.974	3.463	5.088	4.051	0.849
90.0	2.191	7.790	8.557	8.163	1.782
95.0	3.005	9.818	9.540	8.911	2.198
99.0	4.667	10.964	10.448	10.472	3.173
NO. OF OBS	1007	770	651	609	297
					269
					474
					206
					12.0
					-5.563
					-4.857
					-4.387
					-3.186
					-0.008
					4.378
					10.938
					14.464
					14.997

TABLE 3b. (cont'd). ALTITUDE 1 TO 5 (KM)
MAR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.100	-2.572	-3.106	-3.006	-2.449	-3.634	-.996	-3.250		
5.0	-3.612	-2.222	-2.651	-1.783	-.889	-2.912	.147	-2.488		
10.0	-2.568	-1.784	-2.365	-.860	-.610	-2.255	.597	-1.698		
25.0	-1.302	-.470	-.957	.338	.015	.951	1.464	.619		
50.0	-.032	1.506	.967	1.655	1.142	2.303	3.120	1.858		
75.0	1.168	3.136	2.608	3.197	2.337	4.187	4.240	3.011		
90.0	2.412	4.069	3.645	8.849	3.805	5.416	8.351	3.690		
95.0	3.210	6.820	6.343	10.684	5.044	5.890	9.931	4.380		
99.0	4.622	8.284	8.789	12.092	6.259	6.431	10.491	4.604		
NO. OF OBS	667	275	162	188	168	127	148	65		

ALTITUDE 1 TO 5 (KM)
MAR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.112	-4.206	.000	.000	2.843	.466	1.737	-.069		
5.0	-3.029	-3.990	.000	.000	2.897	.612	1.804	.014		
10.0	-2.715	-3.716	.000	.000	2.963	.794	1.889	.118		
25.0	-1.950	-2.445	.000	.000	3.164	1.953	2.142	.404		
50.0	-1.028	-1.242	.000	.000	3.974	2.688	2.565	.951		
75.0	.021	-.183	.000	.000	5.023	4.820	3.261	2.095		
90.0	.492	.569	.000	.000	5.423	5.798	5.444	2.720		
95.0	.800	.784	.000	.000	5.557	6.086	6.060	2.928		
99.0	1.208	.957	.000	.000	5.663	6.377	6.364	3.178		
NO. OF OBS	112	41	0	0	14	29	29	15		

TABLE 3c. ALTITUDE 5 TO 10 (KM)
MAR. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)						NO. OF OBS
		3.0	4.5	6.0	7.5	9.0	10.5	
1.0	-1.048	4.003	2.761	2.513	.000	8.843	8.051	12.0
5.0	-.920	4.173	3.046	2.805	.000	8.936	8.375	9.456
10.0	-.760	4.528	3.759	3.169	.000	9.052	9.023	9.641
25.0	.077	5.202	4.829	3.919	.000	9.399	9.860	9.871
50.0	.495	6.231	5.898	4.464	.000	9.757	10.787	10.658
75.0	.786	6.763	7.369	5.077	.000	10.356	12.177	12.394
90.0	1.020	7.082	8.156	5.831	.000	10.845	12.872	13.343
95.0	1.100	7.295	8.483	7.231	.000	11.192	13.177	15.160
99.0	1.164	7.565	8.697	7.814	.000	11.470	14.068	15.613
		30	60	37	0	23	57	15.859
		34						34

TABLE 3c. (cont'd) ALTITUDE 5 TO 10 (KM)
MAR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-3.874	-3.694	-3.656	-2.460	-2.122
5.0	-2.942	-1.855	1.063	-1.065	-1.810
10.0	-2.013	-0.923	2.435	.519	-1.421
25.0	-0.766	1.255	4.704	2.672	-0.252
50.0	.672	3.981	10.024	6.759	3.459
75.0	6.278	9.013	13.663	14.578	5.821
90.0	17.101	12.846	20.838	19.973	6.977
95.0	25.467	20.092	34.683	30.890	7.418
99.0	30.042	30.720	42.702	38.105	7.772
NO. OF OBS	464	415	579	407	79
					144
					326
					166

10.5
3.189
7.948
10.498
14.311
16.792
19.437
23.523
25.317
35.608

9.0
9.680
11.782
12.762
14.142
15.703
17.423
18.775
19.382
20.771

12.0
12.476
13.323
13.874
14.953
17.223
24.634
32.370
34.778
37.323

ALTITUDE 5 TO 10 (KM)
MAR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-7.814	-6.623	-6.397	-7.504	-12.048
5.0	-4.414	-6.033	-5.825	-5.693	-11.185
10.0	-3.298	-5.295	-5.111	-4.459	-10.317
25.0	-1.927	-3.083	-2.967	-3.092	-2.982
50.0	-0.327	.603	.563	-.195	-.310
75.0	1.049	4.290	4.695	2.949	2.794
90.0	3.206	6.502	17.168	4.427	4.922
95.0	5.244	16.275	25.912	5.481	5.955
99.0	9.422	30.156	28.198	8.614	6.575
NO. OF OBS	717	711	272	407	225
					104
					181
					37

10.5
-11.293
-10.104
-8.618
-5.109
3.861
9.146
23.185
24.843
26.169

9.0
-2.486
-1.511
-.293
2.582
6.567
17.789
20.897
22.858
24.700

12.0
4.117
4.785
5.044
5.467
5.981
6.864
7.282
7.421
7.532

TABLE 3c (cont'd). ALTITUDE 5 TO 10 (KM)
MAR. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)					
	1.5	3.0	4.5	6.0	7.5	9.0
1.0	-23.789	-14.715	-14.229	-16.800	-15.021	-9.310
5.0	-17.495	-8.521	-12.647	-13.374	-14.260	-8.225
10.0	-5.121	-5.605	-11.219	-10.072	-13.547	-5.978
25.0	-2.907	-3.102	-7.426	-5.596	-11.201	-7.854
50.0	.446	-7.715	-3.108	-2.547	-7.349	2.154
75.0	2.983	1.611	.175	2.177	-7.921	3.285
90.0	4.505	4.150	2.807	4.747	4.339	3.936
95.0	6.640	5.296	3.776	5.840	5.231	4.153
99.0	9.056	7.488	6.274	6.678	6.030	4.327
NO. OF OBS	777	315	350	375	266	86
					171	44
						12.0
						-1.705
						-1.365
						-1.979
						-1.341
						.271
						3.748
						5.010
						6.143
						6.597

ALTITUDE 5 TO 10 (KM)
MAR. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)					
	1.5	3.0	4.5	6.0	7.5	9.0
1.0	-20.386	-25.332	-12.603	-21.996	-14.501	-9.646
5.0	-12.746	-22.981	-11.323	-19.380	-13.664	-6.369
10.0	-9.073	-16.549	-10.618	-15.499	-12.618	-5.339
25.0	-2.230	-6.492	-7.696	-6.370	-4.384	-4.027
50.0	1.377	-3.679	-4.872	-2.206	-2.322	-2.126
75.0	4.983	.147	-1.706	.192	-7.953	-7.085
90.0	7.147	2.788	.429	1.631	.490	1.649
95.0	7.869	3.584	1.262	2.110	1.065	3.180
99.0	8.446	4.221	1.620	2.494	1.525	3.639
NO. OF OBS	608	227	112	114	197	243
					265	119
						12.0
						-8.173
						-7.707
						-6.601
						-4.389
						-1.262
						.455
						1.015
						1.257
						1.451

TABLE 3c (cont'd): ALTITUDE 5 TO 10 (KM)
M.R. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-9.387	-8.760	-7.589	-16.519	-8.829	.000	12.0
5.0	-8.432	-6.362	-7.267	-16.076	-8.611	.000	.000
10.0	-7.709	-5.066	-6.864	-15.523	-8.476	.000	.000
25.0	-1.339	-1.563	-5.827	-13.632	-7.606	.000	.000
50.0	.026	.545	-5.362	-10.894	-6.906	.000	.000
75.0	1.158	1.533	-4.423	-9.092	-6.364	.000	.000
90.0	2.116	2.113	-2.005	-3.438	-6.029	.000	.000
95.0	2.556	2.307	-1.702	-1.279	-5.922	.000	.000
99.0	3.167	2.461	-1.460	-.128	-5.760	.000	.000
NO. OF OBS	179	91	27	60	33	0	0

ALTITUDE 5 TO 10 (KM)
MAR. INITIAL WIND SPEED 70 TO 80 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-1.252	-.307	.000	.000	.000	.000	12.0
5.0	-1.066	-.295	.000	.000	.000	.000	.000
10.0	-.986	-.280	.000	.000	.000	.000	.000
25.0	-.744	-.234	.000	.000	.000	.000	.000
50.0	-.342	-.159	.000	.000	.000	.000	.000
75.0	.137	.199	.000	.000	.000	.000	.000
90.0	.517	.290	.000	.000	.000	.000	.000
95.0	.649	.320	.000	.000	.000	.000	.000
99.0	.746	.344	.000	.000	.000	.000	.000
NO. OF OBS	21	11	0	0	0	0	0

TABLE 3d.
MAR. ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	17.180	33.759	3.886	20.569	.000	.000	22.265	20.659		
5.0	18.823	33.874	4.791	22.032	.000	.000	23.646	25.240		
10.0	21.512	34.019	5.922	23.743	.000	.000	25.371	29.057		
25.0	24.633	34.325	9.441	30.717	.000	.000	34.958	34.297		
50.0	26.427	35.515	16.827	35.541	.000	.000	38.848	38.177		
75.0	31.115	36.407	29.966	40.191	.000	.000	43.576	43.782		
90.0	35.275	36.937	32.772	42.691	.000	.000	45.619	47.636		
95.0	36.861	37.034	33.847	46.507	.000	.000	46.367	49.599		
99.0	38.823	37.111	36.565	51.138	.000	.000	47.057	50.472		
NO. OF OBS	253	17	253	120	0	0	120	120		

TABLE 3d (cont'd). ALTITUDE 10 TO 15 (KM)
MAR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	9.0
1.0	12.994	26.632	2.265	41.431	.000
5.0	14.330	27.257	4.327	42.356	.000
10.0	15.871	27.779	6.904	43.067	.000
25.0	20.380	29.477	14.634	43.924	.000
50.0	26.208	33.147	27.149	50.389	.000
75.0	34.757	34.303	37.939	51.747	.000
90.0	39.411	36.567	44.414	53.708	.000
95.0	40.351	37.702	46.572	54.203	.000
99.0	41.102	38.424	48.298	54.897	.000
NO. OF OBS	147	108	147	80	0
					80

10.5
34.878
35.232
35.673
42.152
44.066
47.551
49.146
49.698
50.140
12.0
39.426
39.745
40.036
42.067
45.824
46.637
47.560
47.821
48.092

ALTITUDE 10 TO 15 (KM)
MAR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	9.0
1.0	-27.511	-17.573	-2.868	-19.660	-1.224
5.0	-26.314	-9.980	-2.180	-17.461	-1.880
10.0	-24.817	-8.077	-1.320	-14.883	-1.450
25.0	-20.328	-3.022	1.259	-10.543	.839
50.0	-12.846	2.972	11.631	-4.900	12.542
75.0	8.709	8.559	21.411	15.800	22.961
90.0	14.770	24.559	28.164	18.854	25.508
95.0	16.790	28.665	30.027	19.872	26.429
99.0	18.404	31.033	31.517	20.686	27.166
NO. OF OBS	104	218	96	107	45
					45

10.5
-2.820
-1.779
-.479
3.423
12.655
24.232
27.267
28.278
29.088
12.0
.000
.000
.000
.000
.000
.000
.000
.000
.000

TABLE 3d: (cont'd). ALTITUDE 10 TO 15 (KM)
MAR. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-30.685	-30.315	-4.730	-23.814	-15.221	-4.762	-10.220
5.0	-27.984	-27.697	-1.302	-20.912	-13.745	-1.823	-8.780
10.0	-24.608	-19.509	3.264	-15.865	-5.826	3.188	-4.466
25.0	-5.770	-13.906	6.967	-7.478	4.213	7.518	4.187
50.0	2.813	.683	11.412	3.742	7.376	18.143	17.798
75.0	10.959	5.812	24.445	10.921	11.464	22.223	23.394
90.0	15.670	20.565	27.812	13.816	14.975	26.590	25.877
95.0	17.240	24.756	30.639	16.120	18.035	28.124	27.227
99.0	18.496	28.614	34.013	18.969	20.018	29.441	29.300
NO. OF OBS	323	353	253	324	184	159	171
							4

ALTITUDE 10 TO 15 (KM)
MAR. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-36.515	-33.940	-8.973	-30.443	-37.171	-6.958	-13.527
5.0	-29.777	-32.458	-7.400	-28.574	-36.054	-5.480	-11.690
10.0	-8.214	-31.025	-6.248	-26.180	-34.657	-4.846	-10.378
25.0	-5.624	-27.627	-3.967	-9.028	-24.891	-3.261	-5.680
50.0	-1.306	-3.328	-1.054	1.077	-2.222	.092	-2.140
75.0	4.613	1.901	7.109	7.069	9.702	5.977	.501
90.0	10.034	3.626	14.906	12.654	15.653	10.601	2.501
95.0	13.124	4.846	17.330	15.717	20.797	11.564	3.902
99.0	19.761	6.265	18.518	21.154	24.279	12.309	6.423
NO. OF OBS	1102	611	309	407	331	252	382
							131

12.0
-10.773
-9.121
-8.329
-6.807
-3.768
1.131
2.254
2.646
3.741

TABLE 3d (cont'd). ALTITUDE 10 TO 15 (KM)
MAR. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-32.309	-30.109	-8.623	-30.007	-40.216	-14.336	-12.772	-9.917
5.0	-20.788	-23.823	-7.876	-22.393	-38.681	-13.130	-10.999	-9.475
10.0	-16.979	-14.457	-7.307	-11.608	-36.762	-11.555	-9.064	-8.797
25.0	-5.549	-8.312	-5.864	-8.294	-13.791	-9.604	-6.678	-7.710
50.0	1.369	-2.293	-3.398	-2.771	-7.847	-6.730	-5.048	-6.720
75.0	7.640	3.160	.267	3.285	-1.020	-4.433	-3.952	-5.623
90.0	11.402	6.382	9.464	6.924	3.602	-2.788	-2.068	-4.981
95.0	12.656	7.456	11.216	11.645	7.762	-1.818	.728	-4.624
99.0	13.659	8.315	12.267	15.769	11.928	-7.743	.329	-3.868
NO. OF OBS	651	297	240	254	245	144	202	65

ALTITUDE 10 TO 15 (KM)
MAR. INITIAL WIND SPEED 70 TO 80 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-8.132	-11.337	-9.262	-9.745	-1.154	.000	.000	.000
5.0	-7.174	-9.672	-8.190	-8.302	-1.089	.000	.000	.000
10.0	-6.481	-6.125	-7.528	-7.784	-1.008	.000	.000	.000
25.0	-4.480	-2.449	-6.746	-5.933	-7.765	.000	.000	.000
50.0	-1.510	-.873	-5.327	-3.989	-.563	.000	.000	.000
75.0	.188	.292	-3.339	-2.077	-.461	.000	.000	.000
90.0	3.766	2.940	2.056	3.542	-.400	.000	.000	.000
95.0	5.759	6.704	4.171	4.938	-.380	.000	.000	.000
99.0	9.685	7.969	8.235	7.795	-.364	.000	.000	.000
NO. OF OBS	215	196	102	108	6	0	0	0

TABLE 3e.
MAR. ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.020	-5.767	-3.363	-3.483	-6.821	-1.447	-2.801	-2.478		
5.0	-1.901	-3.952	-1.566	-1.976	-5.196	-1.278	-2.327	-1.912		
10.0	-1.221	-2.563	-1.453	-1.339	-3.192	-1.027	-1.737	-1.190		
25.0	-1.403	-1.782	1.253	1.146	-1.273	-1.322	-1.590	1.994		
50.0	.986	.255	4.293	1.569	.142	-1.126	2.465	9.232		
75.0	8.949	1.879	12.150	6.630	1.151	.208	16.612	16.597		
90.0	15.761	11.777	16.724	13.449	3.118	.609	25.217	25.497		
95.0	17.422	15.705	19.331	15.984	3.749	.734	27.890	30.682		
99.0	21.129	18.857	22.553	17.982	4.254	.835	30.462	32.265		
NO. OF OBS	809	430	548	431	170	103	293	195		

MAR. ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-14.863	-12.707	-7.706	-7.923	-13.967	-2.916	-5.588	-4.898		
5.0	-8.909	-11.254	-6.328	-6.133	-12.314	-2.740	-4.621	-3.490		
10.0	-4.664	-9.438	-4.791	-2.216	-10.248	-2.520	-3.413	-1.730		
25.0	-2.780	-3.989	2.942	-1.409	-2.523	-1.796	.213	3.551		
50.0	.361	.448	6.206	2.372	2.081	-1.225	6.256	12.138		
75.0	5.060	4.839	11.406	9.965	5.466	1.089	12.300	19.619		
90.0	20.756	28.480	24.843	19.346	7.496	1.486	23.284	24.108		
95.0	25.834	30.630	26.642	20.688	8.173	1.618	27.212	25.604		
99.0	28.911	32.350	29.190	21.762	8.715	1.724	30.354	26.801		
NO. OF OBS	547	408	290	309	169	101	170	74		

TABLE 3e. (cont'd). ALTITUDE 15 TO 20 (KM)
MAR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	1.5	3.0	4.5	Time Differences (Hours)	9.0	10.5	12.0
1.0	-22.032	-18.893	-9.874	-12.228	-21.418	-3.654	-7.856
5.0	-20.359	-15.577	-8.850	-9.854	-19.771	-3.392	-7.760
10.0	-19.014	-12.420	-6.591	-8.668	-17.711	-3.028	-7.639
25.0	-7.994	-6.786	-4.028	-2.188	-4.400	-1.839	-7.278
50.0	-2.964	-0.939	5.856	1.361	2.953	2.178	-6.605
75.0	3.322	.833	10.853	6.599	8.239	5.235	-5.932
90.0	6.648	1.594	12.429	17.246	11.276	11.192	-5.571
95.0	10.066	2.628	13.209	19.503	12.288	12.395	-5.450
99.0	15.238	6.053	13.954	23.308	13.098	12.887	-5.354
NO. OF OBS	572	466	270	366	170	183	34

ALTITUDE 15 TO 20 (KM)
MAR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	1.5	3.0	4.5	Time Differences (Hours)	9.0	10.5	12.0
1.0	-22.794	-25.534	-8.960	-6.201	-27.441	-4.444	-10.486
5.0	-12.667	-22.431	-8.442	-4.807	-26.164	-2.860	-10.390
10.0	-9.085	-18.552	-7.109	-3.065	-24.569	-1.720	-10.269
25.0	-5.548	-7.910	-4.987	.808	-19.782	-1.415	-9.908
50.0	-2.264	-1.119	2.732	3.590	-2.213	-1.724	-9.235
75.0	4.766	2.845	8.379	6.372	4.455	2.836	-8.562
90.0	7.209	5.224	14.790	15.246	10.941	5.766	-8.201
95.0	11.629	6.017	15.504	17.793	13.121	7.840	-8.080
99.0	15.885	6.651	16.109	19.831	14.864	8.304	-7.984
NO. OF OBS	472	260	186	197	166	160	34

TABLE 3e (cont'd). ALTITUDE 15 TO 20 (KM)
MAR. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						NO. OF OBS
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-12.009	-32.317	-8.988	-7.677	-34.366	-4.857	10.5
5.0	-9.840	-29.867	-8.301	-5.706	-33.029	-3.982	-11.155
10.0	-7.444	-26.805	-7.409	-5.036	-31.359	-3.147	-10.503
25.0	-5.506	-17.327	-4.753	-2.799	-26.347	-1.764	-9.667
50.0	-3.463	-6.660	.942	-.362	-6.942	-.568	-7.404
75.0	.152	-1.890	3.629	1.254	2.533	1.921	-3.619
90.0	3.783	.972	4.983	2.036	7.097	8.751	-1.437
95.0	6.987	1.926	5.698	2.528	8.619	10.986	.362
99.0	9.721	2.689	8.501	3.154	9.836	12.132	1.131
							2.772
							-5.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
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							-11.831
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							-10.305
							-3.768
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							-1.833
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							-3.768
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							-1.833
							12.0
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							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
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							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
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							-11.692
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							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
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							-1.833
							12.0
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							-3.768
							-3.176
							-1.833
							12.0
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							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176
							-1.833
							12.0
							-11.942
							-11.831
							-11.692
							-11.274
							-10.338
							-10.305
							-3.768
							-3.176

TABLE 4a. ALTITUDE .2 TO 1 (KM)
APR. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-7.568	-6.991	-7.091	-7.480	-7.031	-6.072	12.0
5.0	-5.855	-4.869	-4.295	-5.723	-5.137	-3.858	-5.914
10.0	-4.220	-3.186	-2.963	-4.177	-3.930	-2.337	-3.836
25.0	-1.231	-1.032	-.903	-1.438	-1.819	-.789	-3.388
50.0	.157	.204	.663	.211	-.128	.503	-1.124
75.0	1.448	1.731	2.617	3.108	1.571	3.063	1.662
90.0	3.051	3.694	5.598	5.750	5.769	5.877	4.991
95.0	4.677	6.360	7.258	7.668	7.360	6.921	6.154
99.0	6.878	10.333	11.167	10.435	10.157	8.633	6.462
							6.708
NO. OF OBS	1820	1597	1138	967	647	477	137
							351

ALTITUDE .2 TO 1 (KM)
APR. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-9.494	-10.005	-12.232	-10.799	-11.072	-11.318	12.0
5.0	-7.843	-7.563	-9.917	-8.749	-10.190	-11.071	-9.074
10.0	-7.255	-6.803	-8.877	-7.343	-9.809	-10.762	-8.812
25.0	-4.351	-4.676	-5.197	-5.514	-8.666	-9.639	-8.483
50.0	-2.575	-3.208	-2.846	-3.233	-5.987	-6.112	-7.391
75.0	-.819	-1.217	1.107	-1.529	-3.956	-3.722	-2.935
90.0	3.245	5.055	8.933	3.944	-2.757	-2.988	-2.388
95.0	4.530	5.579	9.889	10.469	-1.970	-1.319	-2.059
99.0	4.890	6.306	10.633	11.094	-1.552	-.648	-1.949
							-1.862
NO. OF OBS	241	286	215	263	173	97	27
							59

TABLE 4 b. ALTITUDE 1 TO 5 (KM)
APR. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.405	-4.513	-4.413	-5.449	-4.701	-6.419	-5.663	-5.324		
5.0	-2.580	-3.033	-2.681	-3.751	-2.738	-3.924	-4.806	-3.323		
10.0	-1.861	-2.282	-1.894	-2.569	-2.008	-2.854	-3.194	-2.568		
25.0	-1.880	-1.917	-1.662	-1.809	-1.629	-1.614	-1.004	-1.268		
50.0	.202	.536	.774	.573	1.160	1.179	.671	1.085		
75.0	1.236	2.074	2.492	2.656	3.211	3.190	2.433	2.462		
90.0	2.366	3.640	4.184	4.708	4.774	4.679	4.503	3.872		
95.0	3.109	5.076	5.189	6.150	6.017	5.578	5.522	4.974		
99.0	5.176	7.827	8.542	9.319	7.436	6.469	6.464	5.891		
NO. OF OBS	5020	3843	3164	2468	1888	1207	994	518		

ALTITUDE 1 TO 5 (KM)
APR. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.978	-7.353	-8.218	-8.129	-8.225	-8.355	-8.908	-8.562		
5.0	-4.481	-5.331	-6.367	-7.154	-6.978	-6.995	-7.453	-8.249		
10.0	-3.489	-4.204	-4.995	-5.828	-6.061	-6.265	-6.873	-7.697		
25.0	-1.633	-2.345	-2.897	-3.938	-4.282	-5.007	-5.705	-5.935		
50.0	-.269	-.437	-1.027	-1.340	-1.823	-2.659	-1.853	-2.362		
75.0	1.493	1.661	1.286	2.462	1.937	-.457	1.715	-.536		
90.0	2.874	3.988	4.507	5.042	4.709	1.353	4.195	1.303		
95.0	3.476	5.463	6.413	9.061	6.070	2.921	6.052	2.932		
99.0	4.839	7.225	9.625	10.268	7.758	4.235	6.759	3.504		
NO. OF OBS	2244	2227	1585	1521	918	736	392	122		

TABLE 4b (cont'd). ALTITUDE 1 TO 5 (KM)
APR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.948	-7.030	-5.670	-6.299	-6.731	-6.837	-4.744
5.0	-2.790	-4.279	-4.899	-5.285	-5.563	-4.918	-4.076
10.0	-1.600	-2.877	-3.821	-4.243	-5.091	-2.925	-2.608
25.0	-0.624	-1.571	-1.173	-1.466	-2.838	-1.318	-1.748
50.0	.353	1.060	.726	-.056	-1.309	-.229	-.686
75.0	1.482	3.612	5.933	3.140	.047	1.256	1.108
90.0	2.603	6.925	9.300	6.775	2.692	3.754	3.981
95.0	3.147	9.015	10.199	8.138	4.676	4.457	4.638
99.0	4.031	10.489	11.647	9.305	8.761	5.695	5.423
NO. OF OBS	621	992	435	620	268	297	214
							0

ALTITUDE 1 TO 5 (KM)
APR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.030	-8.189	-8.480	-9.797	-8.430	.000	.000
5.0	-5.641	-7.092	-7.972	-9.074	-7.831	.000	.000
10.0	-3.630	-4.940	-7.635	-7.554	-7.250	.000	.000
25.0	-2.167	-2.766	-3.447	-4.979	-6.229	.000	.000
50.0	-1.011	-.981	-2.484	-1.801	-.554	.000	.000
75.0	-.019	.539	.483	1.430	1.021	.000	.000
90.0	.868	3.401	2.200	3.542	2.158	.000	.000
95.0	1.292	4.501	2.591	3.869	2.734	.000	.000
99.0	2.084	5.599	3.022	4.339	3.195	.000	.000
NO. OF OBS	275	298	96	191	126	0	0

TABLE 4c. ALTITUDE 5 TO 10 (KM)
APR. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-2.420	-4.317	-5.546	-5.145	-4.346	-3.079	-3.524	-2.217		
5.0	-1.825	-2.520	-3.559	-2.983	-2.415	-1.067	-2.113	-1.003		
10.0	-1.253	-1.681	-2.617	-2.062	-1.527	-0.046	-1.155	.191		
25.0	-.335	-.453	-1.053	-.789	-.662	1.679	.949	2.051		
50.0	.666	.698	.635	.943	2.489	3.155	2.904	3.780		
75.0	1.877	2.208	2.343	2.412	4.675	5.761	4.936	5.181		
90.0	3.442	3.486	3.743	3.335	7.629	9.068	10.660	5.979		
95.0	4.462	4.271	4.648	3.896	8.365	11.693	11.853	6.245		
99.0	6.043	7.439	9.695	4.926	9.832	13.518	13.688	8.300		
NO. OF OBS	1735	1329	1050	882	749	563	508	288		

ALTITUDE 5 TO 10 (KM)
APR. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.225	-4.577	-7.577	-7.924	-8.547	-5.070	-8.730	-5.693		
5.0	-3.242	-3.138	-4.293	-6.152	-6.457	-3.534	-7.802	-5.018		
10.0	-2.282	-2.295	-3.125	-4.148	-4.833	-2.422	-5.697	-3.456		
25.0	-1.114	-.878	-1.124	-1.564	-1.303	.746	-.571	-1.449		
50.0	.031	.634	.769	.449	1.646	2.722	2.453	1.569		
75.0	1.194	1.991	2.297	2.737	3.677	5.263	4.726	4.657		
90.0	2.509	3.326	3.714	5.040	6.097	6.843	10.166	7.865		
95.0	3.183	4.162	4.562	5.989	7.350	8.092	11.148	9.323		
99.0	4.340	5.771	6.539	9.939	9.150	11.514	12.882	10.378		
NO. OF OBS	3180	2179	2130	1605	1227	705	519	339		

TABLE 4c (cont'd). ALTITUDE 5 TO 10 (KM)
APR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-8.861	-7.855	-12.572	-13.638	-15.243	-6.377	-2.175
5.0	-4.762	-5.429	-10.126	-10.350	-10.238	-5.150	-1.585
10.0	-3.465	-3.989	-7.766	-7.528	-7.974	-3.632	-1.068
25.0	-1.555	-2.108	-3.755	-2.243	-2.294	-1.699	-1.158
50.0	-1.105	-1.097	.021	.717	.476	1.137	1.389
75.0	1.230	1.776	1.692	2.349	2.140	2.461	2.906
90.0	2.207	3.079	3.061	3.466	3.525	3.514	4.833
95.0	2.794	3.944	4.094	4.135	4.206	4.356	5.830
99.0	4.200	7.339	10.458	5.640	5.235	6.129	9.102
NO. OF OBS	1958	1826	1275	980	646	541	227
							128

ALTITUDE 5 TO 10 (KM)
APR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-10.465	-10.867	-8.098	-10.722	-14.449	-6.099	-8.270
5.0	-7.887	-6.816	-3.182	-8.710	-6.362	-4.595	-6.993
10.0	-6.276	-4.771	-2.534	-7.655	-4.812	-2.808	-6.289
25.0	-2.380	-2.000	-1.294	-3.865	-2.051	-1.104	-3.313
50.0	-1.636	.033	.872	.442	.337	1.879	3.621
75.0	.803	2.693	4.131	3.094	2.250	4.509	6.712
90.0	2.507	6.027	5.885	6.098	4.106	8.011	8.975
95.0	3.951	7.636	6.761	7.460	4.844	9.163	9.689
99.0	8.937	10.279	8.222	7.442	6.760	12.063	10.296
NO. OF OBS	1619	1625	1082	1075	526	432	300
							45

TABLE 4c (cont'd). ALTITUDE 5 TO 10 (KM)
APR. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-6.805	-12.893	-6.789	-7.041	-9.677	-8.443	-11.230
5.0	-4.684	-11.237	-5.209	-5.464	-7.848	-7.385	-10.828
10.0	-3.787	-5.336	-4.258	-4.087	-7.215	-6.119	-10.182
25.0	-1.923	-2.247	-2.451	-2.060	-5.914	-2.534	-2.522
50.0	-.500	-.125	-.854	-.019	-2.452	.524	.190
75.0	.727	1.554	1.274	2.564	-.115	3.086	2.059
90.0	2.040	3.125	3.289	4.137	2.009	5.111	2.731
95.0	3.211	4.243	4.343	5.232	2.862	7.167	3.194
99.0	4.972	6.741	5.143	7.870	4.073	9.191	3.818
NO. OF OBS	1369	1426	796	1037	513	360	296
							0

ALTITUDE 5 TO 10 (KM)
APR. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-4.736	-6.815	-4.836	-6.150	-9.311	-11.278	-13.423
5.0	-4.357	-5.657	-3.970	-5.461	-7.876	-10.911	-13.157
10.0	-3.798	-4.867	-3.346	-4.584	-7.323	-10.453	-12.823
25.0	-2.182	-2.878	-2.228	-2.772	-6.282	-8.888	-11.823
50.0	-1.027	-.036	-.618	2.679	-2.942	-5.297	-10.155
75.0	.404	2.373	1.030	4.977	2.754	4.023	-4.020
90.0	2.520	4.554	4.585	7.789	5.228	5.933	-1.668
95.0	3.125	5.429	5.570	8.393	7.988	6.507	-.884
99.0	4.977	7.859	6.610	8.847	8.578	6.965	-.257
NO. OF OBS	284	780	252	421	319	179	130
							0

TABLE 4c (cont'd). ALTITUDE 5 TO 10 (KM)
APR. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.679	-7.325	-0.988	.000	-9.392	-10.651	-11.074	.000		
5.0	-3.355	-7.064	.020	.000	-9.319	-10.576	-11.012	.000		
10.0	-3.023	-6.738	1.280	.000	-9.228	-10.482	-10.934	.000		
25.0	-1.918	-5.761	2.346	.000	-8.865	-10.107	-10.504	.000		
50.0	-.923	-4.132	2.831	.000	-8.184	-9.168	-10.199	.000		
75.0	.123	1.453	3.315	.000	-7.866	-8.417	-9.801	.000		
90.0	.572	2.849	3.606	.000	-7.503	-8.041	-9.214	.000		
95.0	.980	3.315	3.703	.000	-7.366	-7.666	-9.097	.000		
99.0	1.196	3.687	3.781	.000	-7.257	-7.365	-9.003	.000		
NO. OF OBS	55	35	15	0	20	20	20	0		

TABLE 4d. ALTITUDE 10 TO 15 (KM)
APR. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	.477	3.046	3.096	4.906	.000	.000	.000	.000		
5.0	1.067	3.631	3.719	5.732	.000	.000	.000	.000		
10.0	1.804	4.119	4.498	6.101	.000	.000	.000	.000		
25.0	2.620	5.581	5.878	6.543	.000	.000	.000	.000		
50.0	3.030	7.287	7.450	7.280	.000	.000	.000	.000		
75.0	3.833	9.786	9.295	9.123	.000	.000	.000	.000		
90.0	4.571	10.334	9.930	9.565	.000	.000	.000	.000		
95.0	5.053	10.517	10.125	9.713	.000	.000	.000	.000		
99.0	5.643	10.663	10.281	9.831	.000	.000	.000	.000		
NO. OF OBS	27	15	19	16	1	0	0	0		

ALTITUDE 10 TO 15 (KM)
APR. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.946	-5.690	-5.456	-5.857	-5.021	-3.914	-7.651	-5.515		
5.0	-2.752	-3.454	-3.628	-3.886	-2.731	-3.023	-5.931	-4.850		
10.0	-2.133	-2.348	-2.639	-2.466	-1.476	-2.312	-2.408	-3.792		
25.0	-1.000	-1.898	-2.768	-2.733	-1.099	-1.471	.344	-1.136		
50.0	.830	1.041	1.710	1.610	2.248	2.669	2.303	1.287		
75.0	2.443	3.094	3.958	4.606	4.721	4.725	5.314	3.399		
90.0	3.410	5.186	5.966	6.667	6.935	5.997	9.186	7.418		
95.0	5.357	6.280	7.454	7.950	7.877	6.469	11.132	8.421		
99.0	16.157	16.753	19.988	9.758	9.235	11.097	12.718	9.905		
NO. OF OBS	2814	2061	1952	1579	1075	576	355	285		

TABLE 4d (cont'd) ALTITUDE 10 TO 15 (KM)
APR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.884	-10.223	-10.873	-10.976	-12.974	-12.946	-11.302
5.0	-5.469	-7.803	-9.255	-8.681	-11.631	-11.556	-10.547
10.0	-4.226	-6.385	-6.892	-7.566	-9.427	-10.126	-9.843
25.0	-2.296	-4.095	-4.147	-4.317	-6.073	-7.417	-6.361
50.0	-7.790	-1.553	-1.626	-1.797	-2.581	-4.777	-3.736
75.0	.906	.499	.553	.306	.437	-1.929	-1.127
90.0	4.035	4.399	4.519	1.815	2.327	1.010	.905
95.0	17.569	9.129	16.089	3.379	3.145	1.907	1.562
99.0	27.774	28.703	24.505	5.358	4.404	3.938	3.609
NO. OF OBS	1283	823	795	527	400	254	275
							173

ALTITUDE 10 TO 15 (KM)
APR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-18.489	-14.097	-19.118	-19.834	-18.663	-20.327	-20.136
5.0	-7.418	-10.861	-12.806	-15.289	-15.589	-16.998	-14.179
10.0	-5.152	-8.888	-10.494	-10.286	-10.164	-12.732	-11.533
25.0	-1.374	-2.428	-2.114	-7.724	-8.424	-1.052	-2.318
50.0	.438	.143	.982	2.370	2.747	2.315	.966
75.0	2.220	2.497	3.770	4.478	4.845	5.409	3.827
90.0	3.708	4.081	5.408	6.322	6.931	8.010	7.434
95.0	5.103	5.057	6.927	7.292	7.868	9.040	9.192
99.0	8.089	6.635	10.421	9.475	8.966	9.864	10.619
NO. OF OBS	1972	1745	1337	1088	920	753	496
							265

TABLE 4d (cont'd). ALTITUDE 10 TO 15 (KM)
APR. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-22.163	-20.646	-20.314	-20.373	-20.328	-18.115	-20.027	-20.501
5.0	-14.739	-15.490	-16.176	-16.548	-15.120	-14.521	-17.886	-18.642
10.0	-5.769	-9.777	-9.869	-12.382	-11.619	-8.545	-14.300	-16.294
25.0	-1.605	-1.995	-1.867	-1.918	-1.504	.990	-2.061	-9.370
50.0	.459	.498	1.539	2.665	3.398	3.881	3.696	3.677
75.0	2.020	2.395	3.969	4.923	6.204	5.880	8.146	5.427
90.0	3.907	4.261	5.751	6.388	10.206	7.858	10.779	6.719
95.0	5.627	6.185	7.626	8.223	12.159	9.312	11.447	7.229
99.0	8.402	7.915	9.323	11.781	16.730	11.572	12.321	7.638
NO. OF OBS	1960	1917	1150	1256	704	503	306	77

ALTITUDE 10 TO 15 (KM)
APR. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-6.411	-6.209	-8.411	-8.373	-9.466	-9.222	-9.788	.000
5.0	-4.260	-4.097	-6.641	-5.182	-5.931	-7.387	-6.385	.000
10.0	-3.097	-2.956	-4.678	-3.951	-5.199	-5.097	-5.018	.000
25.0	-1.543	-1.189	-2.860	-2.222	-3.875	-2.468	-3.094	.000
50.0	-.244	.673	-.830	.522	-1.543	.630	-1.399	.000
75.0	1.156	2.542	1.724	3.972	2.042	4.164	.196	.000
90.0	2.877	4.391	3.620	6.440	5.793	7.398	2.505	.000
95.0	4.021	5.726	5.736	7.348	7.516	9.123	3.805	.000
99.0	5.310	7.775	11.262	11.056	14.858	10.529	6.508	.000
NO. OF OBS	1842	2095	1058	1309	590	534	388	0

TABLE 4d (cont'd). ALTITUDE 10 10 15 (KM)
APR. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.581	-7.553	-11.730	-9.891	-14.042	-10.806	-14.701	.000		
5.0	-4.383	-6.366	-9.999	-8.831	-13.285	-9.854	-14.006	.000		
10.0	-3.502	-5.573	-7.898	-7.727	-12.604	-9.308	-13.155	.000		
25.0	-1.483	-3.084	-5.034	-5.174	-10.510	-8.458	-11.599	.000		
50.0	-.057	-.447	-1.642	-3.571	-7.163	-6.978	-9.745	.000		
75.0	.829	1.482	.699	.957	-2.523	-1.013	-3.623	.000		
90.0	2.778	2.858	2.381	3.086	.376	.322	-1.172	.000		
95.0	3.622	3.942	3.920	4.033	2.064	.786	.658	.000		
99.0	4.302	5.130	5.140	5.327	3.773	1.157	1.631	.000		
NO. OF OBS	302	527	289	225	293	163	163	0		

TABLE 'e. ALTITUDE 15 TO 20 (KM)
APR. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-3.289	-3.078	-3.022	-3.197	-3.298	-4.085	10.5
5.0	-2.317	-1.743	-1.597	-2.223	-1.702	-2.341	-3.499
10.0	-1.681	-1.142	-0.970	-1.436	-1.210	-1.557	-1.970
25.0	-0.730	-0.400	-0.319	-0.549	-0.249	-0.670	-1.255
50.0	-0.074	0.163	0.258	0.028	0.310	-0.178	0.141
75.0	0.520	1.370	1.025	0.895	1.520	0.170	1.381
90.0	2.061	3.341	2.461	2.330	3.091	0.556	2.892
95.0	3.165	4.915	3.601	3.284	4.830	0.907	6.337
99.0	5.841	8.000	7.135	7.879	8.491	2.548	8.028
							10.069
NO. OF OBS	3353	3060	2347	2033	1329	839	608
							309

ALTITUDE 15 TO 20 (KM)
APR. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-6.836	-7.796	-7.070	-6.861	-7.306	-9.123	10.5
5.0	-5.392	-4.830	-4.940	-5.605	-5.949	-7.606	-9.351
10.0	-4.377	-3.710	-3.731	-4.800	-4.403	-6.629	-5.869
25.0	-2.471	-2.068	-1.706	-2.733	-2.283	-2.806	-4.701
50.0	-0.735	-0.084	0.392	-0.747	-0.051	-1.063	-2.520
75.0	1.912	2.806	2.763	2.153	3.777	0.203	2.758
90.0	4.948	8.006	6.691	5.551	7.361	2.864	6.261
95.0	7.610	10.172	11.207	7.567	11.966	4.663	13.354
99.0	12.120	14.116	15.415	19.881	19.881	6.124	16.032
							19.544
NO. OF OBS	3348	2629	1945	1746	1081	699	505
							208

12.0
-9.070
-8.628
-7.978
-6.625
-2.356
-0.753
2.990
3.588
6.185

TABLE e (cont'd). ALTITUDE 15 TO 20 (KM)
APR. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-12.420	-12.272	-15.125	-11.826	-11.864	-15.024	-15.012
5.0	-9.425	-8.692	-10.564	-9.755	-7.781	-10.546	-9.208
10.0	-7.018	-5.378	-7.355	-8.198	-6.119	-8.793	-7.609
25.0	-3.462	-2.624	-3.377	-3.957	-2.856	-4.577	-3.798
50.0	-0.424	.104	1.040	-0.309	.374	-1.586	.616
75.0	2.391	3.260	4.364	3.636	5.232	1.743	6.962
90.0	5.566	5.549	7.267	7.452	7.721	7.257	9.052
95.0	8.678	7.086	8.939	9.580	10.159	8.881	14.646
99.0	13.522	9.321	17.405	18.904	18.645	12.515	20.439
NO. OF OBS	2101	1942	1427	1335	962	712	548
							220

ALTITUDE 15 TO 20 (KM)
APR. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-9.018	-12.108	-12.035	-13.424	-5.453	-9.555	-6.479
5.0	-5.148	-8.977	-9.382	-11.510	-4.478	-8.230	-5.826
10.0	-4.060	-6.646	-7.645	-9.299	-3.770	-6.501	-5.317
25.0	-1.783	-3.801	-3.576	-5.096	-2.377	-4.293	-3.752
50.0	.156	-0.515	-0.297	-1.008	-0.330	-1.954	-1.533
75.0	1.948	1.671	2.670	2.763	1.306	.572	1.010
90.0	3.928	4.063	6.101	4.869	4.590	3.563	3.616
95.0	5.145	5.184	7.016	5.558	5.674	5.447	4.833
99.0	9.762	6.379	8.365	7.676	7.543	7.675	6.034
NO. OF OBS	1178	1257	725	693	474	466	285
							63

TABLE 4e (cont'd). ALTITUDE 15 10 20 (KM)
APR. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.740	-9.371	-11.568	-9.561	-7.698	-8.260	-5.997	.000		
5.0	-4.658	-7.222	-9.337	-8.210	-5.750	-7.900	-5.478	.000		
10.0	-3.982	-6.640	-7.237	-7.135	-4.905	-6.704	-5.154	.000		
25.0	-2.161	-4.674	-4.192	-5.247	-3.133	-3.358	-3.792	.000		
50.0	-.652	-2.561	-.965	-3.669	-.819	-1.198	-2.707	.000		
75.0	.803	-1.129	.787	-1.611	.239	.583	-.886	.000		
90.0	2.935	.451	2.791	.358	1.547	2.229	-.346	.000		
95.0	5.230	1.399	5.632	1.180	2.821	3.021	.118	.000		
99.0	5.974	1.936	7.454	3.273	3.705	3.452	.599	.000		
NO. OF OBS	220	305	154	191	145	77	47	0		

TABLE 5a. ALTITUDE .2 TO 1 (KM)
MAY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.967	-4.039	-6.222	-6.048	-5.732	-5.067	-5.958	-6.325		
5.0	-4.208	-2.603	-4.937	-4.388	-3.731	-4.180	-3.204	-5.720		
10.0	-2.486	-2.049	-4.204	-3.612	-2.947	-3.329	-2.525	-5.024		
25.0	-1.203	-1.005	-2.581	-1.809	-1.729	-1.838	-1.616	-3.277		
50.0	-.154	.061	-.052	-.096	-.226	-.847	-.066	-.298		
75.0	1.514	1.218	1.574	.944	2.039	-.058	2.348	3.190		
90.0	3.202	2.204	3.581	2.048	4.652	1.998	4.793	5.550		
95.0	4.353	3.593	4.370	2.680	6.413	3.125	5.460	6.577		
99.0	8.664	8.376	5.084	4.184	9.340	3.756	6.485	8.157		
NO. OF OBS	403	601	496	399	400	164	235	116		

ALTITUDE .2 TO 1 (KM)
MAY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.583	-10.270	-4.205	-.836	-2.393	.000	-4.109	-.614		
5.0	-3.514	-9.952	-3.985	-.538	-2.287	.000	-3.945	-.512		
10.0	-3.427	-9.553	-3.502	-.166	-2.153	.000	-3.740	-.385		
25.0	-3.168	-8.359	-1.753	.611	-1.753	.000	-3.124	-.001		
50.0	-2.365	-6.367	-.917	1.203	-.020	.000	-1.538	.637		
75.0	-1.562	-3.237	-.267	1.667	.913	.000	.514	1.231		
90.0	-1.303	-.298	.710	2.098	1.313	.000	1.410	1.422		
95.0	-1.214	.346	1.155	2.284	1.447	.000	1.615	1.486		
99.0	-1.147	.897	1.815	2.433	1.553	.000	1.779	1.537		
NO. OF OBS	7	14	37	11	10	0	11	7		

TABLE 5b. ALTITUDE 1 TO 5 (KM)
MAY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)					9.0	10.5	12.0
		3.0	4.5	6.0	7.5	9.0			
1.0	-2.625	-4.603	-4.498	-5.284	-4.397	-6.716	-4.900	-7.053	
5.0	-1.285	-2.621	-2.844	-4.186	-3.525	-2.550	-3.890	-5.426	
10.0	-0.939	-2.095	-1.482	-3.577	-2.616	-1.790	-3.004	-1.922	
25.0	-0.218	-1.091	-0.477	-1.279	-0.361	-0.648	-0.743	1.106	
50.0	.464	.135	.692	.482	1.097	1.801	1.314	2.520	
75.0	1.182	1.233	1.889	1.726	2.373	2.571	3.194	4.312	
90.0	2.005	2.260	3.387	2.662	3.767	3.210	4.565	5.357	
95.0	2.717	3.151	4.226	3.361	4.913	3.769	5.261	5.799	
99.0	3.570	4.692	5.761	5.333	6.604	4.956	8.404	6.704	
NO. OF OBS	1417	2267	1956	1479	1463	559	912	458	

ALTITUDE 1 TO 5 (KM)
MAY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)					9.0	10.5	12.0
		3.0	4.5	6.0	7.5	9.0			
1.0	-4.530	-3.840	-7.415	-8.112	-5.062	-7.562	-2.453	-6.774	
5.0	-3.294	-3.435	-5.274	-7.720	-4.427	-6.251	-2.346	-4.148	
10.0	-2.601	-3.197	-4.454	-6.013	-3.756	-4.896	-2.211	-1.434	
25.0	-1.540	-2.412	-3.307	-4.057	-2.883	-2.724	-1.674	-0.941	
50.0	-0.574	-1.003	-1.737	-0.903	-1.622	-1.525	-0.987	-0.121	
75.0	.543	.904	-0.303	-0.037	-0.826	-0.146	.207	.700	
90.0	1.459	1.866	.670	.538	.195	1.033	1.243	1.192	
95.0	1.833	2.359	1.180	1.024	1.007	1.427	1.396	1.356	
99.0	2.754	2.930	1.588	1.706	1.507	1.741	1.519	1.487	
NO. OF OBS	181	133	124	121	137	81	48	22	

TABLE 5c. ALTITUDE 5 TO 10 (KM)
MAY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LFVELS	1.5	Time Differences (Hours)					9.0	10.5	12.0
		3.0	4.5	6.0	7.5	9.0			
1.0	-3.439	-4.398	-3.310	-6.102	-5.346	-1.277	-2.940	-2.940	-8.69
5.0	-2.551	-3.319	-2.123	-2.994	-3.116	-.444	-1.347	-1.347	.040
10.0	-1.889	-2.496	-1.395	-1.813	-1.581	.228	-.610	-.610	.716
25.0	-.706	-1.099	-.086	-.187	.311	1.849	.560	.560	2.072
50.0	.761	.232	1.198	2.180	2.585	4.204	2.345	2.345	4.162
75.0	2.064	2.041	3.974	5.681	4.937	6.768	4.652	4.652	5.554
90.0	3.478	3.634	6.974	7.660	7.713	8.359	6.677	6.677	6.700
95.0	5.793	4.471	8.353	8.774	8.832	8.984	7.842	7.842	7.049
99.0	9.014	7.112	9.841	11.162	9.832	9.404	9.212	9.212	7.495
NO. OF OBS	984	1211	1372	1094	882	545	643	643	353

ALTITUDE 5 TO 10 (KM)
MAY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LFVELS	1.5	Time Differences (Hours)					9.0	10.5	12.0
		3.0	4.5	6.0	7.5	9.0			
1.0	-6.264	-5.846	-7.605	-8.804	-10.246	-5.110	-8.972	-8.972	-6.023
5.0	-4.048	-4.507	-6.000	-6.608	-6.751	-4.430	-5.018	-5.018	-5.605
10.0	-3.110	-3.937	-4.914	-4.958	-5.656	-3.187	-4.362	-4.362	-4.261
25.0	-2.064	-2.053	-3.154	-2.679	-3.748	-1.554	-2.775	-2.775	-2.329
50.0	-.334	-.058	-1.708	-.747	-1.514	-.040	-1.773	-1.773	.094
75.0	1.000	1.711	.304	.878	.043	1.408	.495	.495	2.004
90.0	2.014	3.405	1.547	3.012	1.381	3.141	3.492	3.492	3.076
95.0	2.728	4.274	2.129	3.781	2.617	4.142	4.108	4.108	3.692
99.0	3.412	5.785	4.028	4.625	4.425	5.073	4.608	4.608	4.323
NO. OF OBS	876	1533	973	749	875	203	479	479	181

TABLE 5c (cont'd) ALTITUDE 5 TO 10 (KM)
MAY INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-7.724	-7.546	-8.455	-8.597	-11.346	-8.961	-11.990	-11.820		
5.0	-7.129	-6.253	-7.727	-7.838	-10.769	-8.843	-11.231	-11.739		
10.0	-6.611	-5.212	-7.168	-7.415	-10.048	-8.695	-10.736	-11.637		
25.0	-5.264	-4.048	-6.137	-5.663	-8.094	-7.970	-9.787	-11.324		
50.0	-3.048	-2.640	-4.171	-4.146	-5.939	-7.290	-6.095	-9.580		
75.0	-1.801	-.676	-2.585	-3.229	-3.883	-5.930	-3.827	-8.100		
90.0	-.732	.646	-1.579	-2.265	-2.673	-4.593	-1.665	-6.632		
95.0	-.087	2.622	-.886	-1.724	-2.270	-4.094	-.801	-5.600		
99.0	.314	4.665	.593	-1.265	2.869	-3.638	-.168	-4.632		
NO. OF OBS	140	256	255	157	243	52	78	66		

TABLE 5d. ALTITUDE 10 TO 15 (KM)
MAY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)					9.0	10.5	12.0
		3.0	4.5	6.0	7.5	9.0			
1.0	-3.065	-1.168	-3.065	-1.393	-.050	.555	2.061	2.921	2.921
5.0	-2.419	-.960	-.652	-.785	.271	.895	2.267	3.203	3.203
10.0	-2.074	-.700	-.130	.348	1.073	1.321	2.524	3.555	3.555
25.0	-.329	.079	.946	1.642	3.467	2.427	3.372	4.613	4.613
50.0	2.456	1.422	1.842	3.416	5.265	3.785	5.350	6.377	6.377
75.0	3.718	2.827	4.318	5.262	6.270	4.697	6.440	11.373	11.373
90.0	5.876	4.358	8.203	7.949	6.700	7.277	8.998	12.607	12.607
95.0	7.093	4.894	11.556	9.071	6.872	10.279	10.659	13.019	13.019
99.0	7.772	8.538	13.088	9.523	7.220	11.096	12.021	13.348	13.348
NO. OF OBS	191	166	217	250	116	66	94	14	14

ALTITUDE 10 TO 15 (KM)
MAY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)					9.0	10.5	12.0
		3.0	4.5	6.0	7.5	9.0			
1.0	-5.222	-7.134	-8.861	-6.923	-6.499	-8.307	-5.410	-7.567	-7.567
5.0	-4.205	-6.178	-5.534	-5.270	-5.693	-7.696	-4.498	-6.930	-6.930
10.0	-3.574	-4.738	-4.684	-4.628	-4.686	-6.815	-3.861	-6.302	-6.302
25.0	-2.290	-2.487	-2.904	-2.739	-2.084	-3.275	-2.354	-4.214	-4.214
50.0	-.447	-.025	-.857	-.514	.329	-.739	.078	-.819	-.819
75.0	1.678	2.141	1.130	2.408	2.384	1.313	1.946	.676	.676
90.0	3.110	4.302	3.120	4.450	4.573	2.884	3.711	2.872	2.872
95.0	3.893	6.658	5.694	6.526	6.143	4.316	4.955	3.458	3.458
99.0	6.533	13.585	10.447	8.256	9.396	7.256	7.429	5.547	5.547
NO. OF OBS	1069	1078	962	817	641	476	581	219	219

TABLE 5d (cont'd). ALTITUDE 10 TO 15 (KM)
MAY INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-6.850	-15.695	-12.907	-14.828	-15.680	-13.106	-17.521
5.0	-4.668	-10.488	-9.023	-12.223	-10.330	-12.111	-10.066
10.0	-3.771	-8.755	-6.684	-10.516	-8.046	-11.226	-7.052
25.0	-2.204	-4.421	-4.599	-7.434	-5.297	-9.069	-4.809
50.0	-1.482	-1.849	-1.741	-3.591	-1.993	-5.929	-1.807
75.0	1.014	1.227	1.213	.668	1.039	-3.386	3.054
90.0	3.078	3.382	4.006	3.492	5.673	-1.610	6.758
95.0	3.731	4.444	6.586	4.964	7.388	-1.113	9.982
99.0	4.229	7.007	15.369	7.924	15.121	3.929	14.763
NO. OF OBS	482	1156	904	643	711	243	272
							259

ALTITUDE 10 TO 15 (KM)
MAY INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-6.000	-12.302	-12.479	-16.504	-20.257	-13.236	-23.568
5.0	-5.332	-9.707	-9.691	-15.882	-18.973	-12.498	-22.718
10.0	-4.765	-8.110	-9.081	-15.426	-18.053	-11.577	-21.663
25.0	-3.806	-4.678	-7.061	-14.061	-14.713	-8.811	-19.957
50.0	-2.533	-2.484	-4.242	-11.768	-5.887	-5.739	-16.466
75.0	3.615	-1.668	-1.879	-5.541	.592	-3.434	-4.417
90.0	5.233	3.394	1.058	-1.152	4.816	-2.052	-1.763
95.0	6.070	4.566	2.581	.920	5.511	-1.591	-1.878
99.0	6.654	5.927	4.191	2.404	6.306	-1.222	.893
NO. OF OBS	257	408	431	248	466	15	151
							108

TABLE 5d (cont'd). ALTITUDE 10 TO 15 (KM)
MAY INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.266	-8.422	-11.297	-4.985	-19.390	.000	-21.909	.000		
5.0	-6.170	-7.862	-10.723	-4.884	-18.428	.000	-21.145	.000		
10.0	-6.058	-7.163	-10.006	-4.583	-14.894	.000	-20.190	.000		
25.0	-5.690	-6.327	-7.991	-4.089	-13.255	.000	-17.325	.000		
50.0	-5.290	-4.079	-6.362	-2.450	-11.813	.000	-12.550	.000		
75.0	-4.990	-2.684	-3.936	-1.354	-10.561	.000	-6.451	.000		
90.0	-4.810	-1.652	.466	-1.031	-7.882	.000	-2.358	.000		
95.0	-4.750	-1.305	1.183	-0.881	-7.381	.000	.994	.000		
99.0	-4.702	-.981	1.757	-.760	-6.980	.000	.097	.000		
NO. OF OBS	6	102	86	42	66	0	102	0		

TABLE 5e. ALTITUDE 15 TO 20 (KM)
MAY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-1.578	-5.509	-4.505	-5.338	-5.615	.084	-5.520	-1.208		
5.0	-1.847	-3.620	-2.407	-2.248	-3.685	.421	-3.823	-.921		
10.0	-.762	-1.930	-1.659	.032	-2.491	.874	-1.653	-.561		
25.0	-.399	-.284	-.621	.364	-.431	2.167	.041	.845		
50.0	-.052	.424	.379	1.347	.102	4.317	.819	3.712		
75.0	1.250	1.856	2.520	3.632	3.130	7.593	3.280	7.229		
90.0	2.941	3.881	5.392	6.847	6.358	9.812	5.976	10.773		
95.0	4.183	4.904	8.970	8.425	8.361	10.849	8.113	11.557		
99.0	7.178	7.745	10.842	10.279	10.125	14.024	12.789	12.079		
NO. OF OBS	1032	1502	1395	1098	985	503	723	309		

ALTITUDE 15 TO 20 (KM)
MAY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.739	-9.032	-5.541	-10.996	-11.464	-1.900	-10.884	-2.537		
5.0	-3.162	-7.430	-3.001	-9.005	-9.620	-.233	-9.848	-2.403		
10.0	-2.636	-6.097	-2.517	-6.910	-7.287	.891	-9.006	-2.235		
25.0	-1.620	-3.180	-1.305	-2.841	-2.111	2.170	-6.624	-1.733		
50.0	-.888	-.259	.582	.900	-.344	5.042	-.683	1.115		
75.0	1.214	1.770	3.388	3.670	2.179	7.928	3.390	3.917		
90.0	3.019	4.896	5.326	6.556	7.383	9.892	8.132	7.322		
95.0	4.450	6.146	6.311	7.794	8.960	10.806	10.024	8.607		
99.0	6.165	7.573	7.961	9.513	11.274	11.743	11.810	11.627		
NO. OF OBS	705	1095	860	675	729	245	354	151		

TABLE 5e (cont'd). ALTITUDE 15 TO 20 (KM)
MAY INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.614	-17.146	-10.436	-17.832	-20.070	-5.971	-20.417
5.0	-7.204	-15.151	-8.238	-16.518	-18.063	-5.614	-19.081
10.0	-4.835	-10.760	-6.860	-14.532	-14.926	-5.116	-17.465
25.0	-3.104	-4.856	-3.339	-7.811	-7.727	-3.484	-15.386
50.0	-2.314	-1.235	-1.727	-3.832	-2.143	.563	-6.572
75.0	-3.65	.196	-.004	.329	-.748	2.812	-2.504
90.0	1.490	1.588	2.802	1.460	.231	5.044	-.907
95.0	2.094	2.104	4.098	3.082	1.491	5.514	-.688
99.0	2.706	2.926	5.999	6.382	2.920	5.871	-.514
NO. OF OBS	250	395	332	220	272	52	116
							127

ALTITUDE 15 TO 20 (KM)
MAY INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-4.040	-4.569	-9.042	-5.873	-9.302	.000	-4.294
5.0	-4.002	-4.523	-8.892	-5.763	-9.070	.000	-4.069
10.0	-3.954	-4.466	-8.704	-5.625	-8.780	.000	-3.787
25.0	-3.772	-4.296	-8.182	-5.360	-7.910	.000	-3.345
50.0	-3.327	-4.012	-7.779	-4.919	-6.460	.000	-2.876
75.0	-2.965	-3.160	-7.376	-4.559	-5.011	.000	-1.737
90.0	-2.559	-2.308	-6.608	-4.422	-4.141	.000	-.893
95.0	-2.415	-2.094	-6.174	-4.376	-2.359	.000	-.611
99.0	-2.299	-1.797	-5.723	-4.339	.656	.000	-.386
NO. OF OBS	13	8	13	7	14	0	7
							13

TABLE 6a. ALTITUDE .2 TO 1 (KM)
JUNF INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-8.903	-8.160	-7.332	-7.345	-6.992	-6.587	-6.500	-5.093		
5.0	-8.063	-7.141	-6.068	-6.707	-6.278	-5.927	-6.060	-4.905		
10.0	-6.381	-5.822	-5.071	-5.837	-5.338	-5.212	-5.564	-4.646		
25.0	-1.409	-3.069	-1.074	-2.944	-2.952	-3.201	-4.038	-3.287		
50.0	.621	-.110	.768	-.137	.445	.583	-1.109	-1.216		
75.0	3.307	.988	2.097	4.466	2.109	3.476	6.304	.891		
90.0	7.773	3.831	4.631	7.379	9.091	6.028	8.871	2.228		
95.0	8.766	8.009	6.842	8.732	10.262	7.229	9.181	2.991		
99.0	9.924	9.330	9.485	9.984	10.868	9.046	9.428	3.462		
NO. OF OBS	807	600	458	374	300	202	123	54		

ALTITUDE .2 TO 1 (KM)
JUNF INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-12.099	-8.408	-4.491	-10.765	-4.918	-2.314	.000	-5.915		
5.0	-11.615	-8.159	-4.137	-10.583	-4.589	-1.577	.000	-5.697		
10.0	-11.010	-7.747	-3.694	-10.355	-4.295	-1.508	.000	-5.424		
25.0	-9.196	-4.479	-2.366	-9.673	-3.239	-1.302	.000	-4.215		
50.0	-6.171	-2.733	-1.455	-5.014	-2.148	-.969	.000	-2.899		
75.0	-2.406	-1.288	-.152	-2.284	-1.561	-.647	.000	-2.314		
90.0	.039	-.671	.577	.494	-1.164	-.338	.000	-1.700		
95.0	.855	-.466	.855	.987	-1.027	-.235	.000	-1.495		
99.0	1.507	-.301	1.091	1.381	-.917	.084	.000	-1.331		
NO. OF OBS	54	97	34	77	28	44	0	28		

TABLE 6b. ALTITUDE 1 TO 5 (KM)
JUNE INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.794	-5.914	-3.256	-3.960	-2.127	-3.153	-4.136	1.042		
5.0	-3.783	-3.697	-1.249	-2.159	-0.772	-0.479	-1.670	1.893		
10.0	-2.369	-2.753	-0.288	-1.262	.411	1.139	-0.022	2.328		
25.0	-0.584	-0.838	-0.973	-0.887	2.096	3.433	2.851	4.104		
50.0	.704	.844	2.753	2.530	3.915	4.572	4.959	4.840		
75.0	2.781	2.737	4.492	3.661	5.999	7.226	6.015	5.400		
90.0	5.110	4.763	5.684	5.223	8.661	8.472	7.227	6.243		
95.0	6.174	5.561	6.122	6.472	9.443	8.711	8.618	6.633		
99.0	8.574	6.469	7.112	7.883	10.467	9.088	9.314	7.228		
NO. OF OBS	2341	1730	1463	1023	956	628	466	161		

ALTITUDE 1 TO 5 (KM)
JUNE INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-11.710	-7.195	-5.007	-9.363	-4.469	-5.104	-2.697	-7.310		
5.0	-7.444	-5.895	-3.174	-5.372	-3.990	-3.947	-2.606	-5.985		
10.0	-5.080	-3.663	-2.532	-4.046	-3.297	-3.526	-2.491	-5.050		
25.0	-2.678	-2.227	-1.451	-3.005	-1.877	-2.272	-2.271	-4.184		
50.0	-1.139	-0.816	-0.196	-1.060	-0.446	-0.760	-2.067	-2.665		
75.0	.024	.347	1.087	.912	1.723	.436	-1.883	-0.949		
90.0	1.156	1.706	2.640	2.536	2.661	1.618	-1.797	-0.176		
95.0	1.744	2.334	3.419	3.088	3.061	2.846	-1.769	.110		
99.0	2.781	3.355	4.338	3.865	3.454	3.542	-1.746	.422		
NO. OF OBS	1719	990	457	737	324	332	14	159		

TABLE 6C. ALTITUDE 5 TO 10 (KM)
JUNE INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.255	-3.690	-3.520	-5.679	-4.451	-3.522	-3.056	-4.986		
5.0	-2.173	-2.426	-2.730	-3.559	-3.291	-2.670	-2.417	-4.242		
10.0	-1.655	-1.856	-2.205	-2.432	-2.119	-1.829	-2.073	-3.536		
25.0	-0.672	-0.921	-1.190	-1.066	-0.802	-0.996	-1.199	-2.176		
50.0	0.198	0.265	0.186	-0.032	0.338	0.126	0.037	-0.741		
75.0	1.114	1.362	1.523	1.037	1.887	1.685	1.628	0.480		
90.0	2.058	2.660	3.213	2.059	3.048	3.087	3.674	3.195		
95.0	2.568	3.730	3.988	2.821	3.802	3.733	4.407	4.275		
99.0	3.797	5.400	5.153	3.891	4.741	5.257	5.095	5.677		
NO. OF OBS	2619	2217	1425	1662	979	845	416	297		

ALTITUDE 5 TO 10 (KM)
JUNE INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.499	-5.923	-5.069	-5.083	-6.026	-3.786	-3.976	-5.037		
5.0	-3.810	-4.785	-4.009	-4.612	-4.632	-3.135	-3.736	-4.742		
10.0	-3.006	-4.003	-3.642	-4.187	-3.619	-2.324	-3.492	-4.324		
25.0	-1.996	-3.041	-2.487	-2.931	-1.439	-1.603	-2.710	-3.570		
50.0	-0.891	-1.619	-0.960	-1.144	0.098	0.472	-1.876	-2.451		
75.0	0.204	0.622	1.136	0.706	1.848	1.732	0.021	-1.196		
90.0	1.633	2.062	2.723	1.885	3.722	4.451	1.116	0.395		
95.0	2.337	3.680	3.458	2.732	4.387	4.915	1.562	1.017		
99.0	3.912	4.970	6.099	4.473	5.363	5.486	2.005	1.797		
NO. OF OBS	1311	904	668	491	532	313	184	103		

TABLE 6c (cont'd). ALTITUDE 5 TO 10 (KM)
JUNE INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-11.424	-12.378	-4.363	-7.333	-6.270	-5.127	.000	.000		
5.0	-10.262	-10.596	-3.997	-7.146	-5.990	-4.914	.000	.000		
10.0	-6.279	-8.708	-2.950	-6.912	-5.794	-4.723	.000	.000		
25.0	-1.094	-4.163	-1.389	-6.352	-5.045	-3.943	.000	.000		
50.0	.672	-1.787	-.846	-2.849	-2.557	-1.279	.000	.000		
75.0	2.214	.797	-.325	.027	-.068	-.043	.000	.000		
90.0	3.907	.275	1.153	1.514	1.629	1.213	.000	.000		
95.0	4.741	1.448	1.681	1.834	2.117	1.470	.000	.000		
99.0	6.320	2.318	2.332	2.271	2.583	1.630	.000	.000		
NO. OF OBS	209	166	107	47	89	42	0	0		

TABLE 6d. ALTITUDE 10 TO 15 (KM)
JUNE INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.695	-3.722	-3.681	-4.630	-6.095	-5.332	-4.654	-1.029		
5.0	-2.276	-2.811	-2.815	-2.811	-2.878	-3.991	-3.208	-0.576		
10.0	-1.743	-2.009	-1.230	-1.776	-1.934	-2.303	-2.443	.038		
25.0	-0.793	-0.376	.399	.434	-0.088	.223	1.022	1.973		
50.0	.479	1.124	2.278	2.036	2.684	2.733	3.872	3.791		
75.0	2.138	2.826	4.078	3.996	5.456	4.178	5.445	5.141		
90.0	3.622	4.224	5.924	6.306	6.900	5.386	7.448	7.981		
95.0	7.549	5.446	7.552	7.091	7.742	5.759	8.395	8.423		
99.0	10.165	7.077	8.392	8.117	11.791	6.726	9.183	9.069		
NO. OF OBS	1427	1234	889	1220	469	444	254	225		

ALTITUDE 10 TO 15 (KM)
JUNE INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.703	-12.258	-13.307	-13.803	-14.467	-12.601	-13.680	-9.044		
5.0	-3.976	-9.608	-10.723	-12.066	-13.046	-9.839	-11.296	-8.596		
10.0	-2.820	-5.424	-8.787	-9.021	-11.700	-8.223	-10.674	-8.175		
25.0	-1.625	-2.500	-3.990	-4.873	-6.507	-5.501	-8.557	-6.610		
50.0	.042	-0.268	-0.400	-1.568	-3.519	-3.970	-5.639	-3.987		
75.0	2.150	2.373	2.951	1.834	.413	-2.280	-2.208	-1.020		
90.0	4.581	5.431	5.118	5.114	5.314	1.219	.929	.746		
95.0	5.811	6.771	6.091	6.828	7.208	4.625	1.753	1.803		
99.0	8.343	9.157	8.384	9.214	9.611	10.878	3.617	2.860		
NO. OF OBS	1754	1460	1167	830	853	611	344	175		

TABLE 6d (cont'd). ALTITUDE 10 TO 15 (KM)
JUNE INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-18.845	-18.940	-16.188	-15.712	-17.177	-13.881	.000	.000		
5.0	-7.867	-16.623	-8.391	-14.359	-14.846	-10.552	.000	.000		
10.0	-7.195	-15.062	-7.475	-10.041	-11.932	-8.100	.000	.000		
25.0	-5.177	-4.968	-4.726	-6.767	-5.293	-6.094	.000	.000		
50.0	-1.815	-1.714	-1.192	-2.153	-1.806	-2.919	.000	.000		
75.0	1.772	1.121	1.195	-2.315	1.871	-1.104	.000	.000		
90.0	3.949	2.951	2.884	3.608	4.181	2.663	.000	.000		
95.0	4.674	3.636	3.447	4.039	4.958	3.852	.000	.000		
99.0	5.255	4.183	3.897	4.384	5.566	4.802	.000	.000		
NO. OF OBS	494	419	344	150	278	145	2	0		

ALTITUDE 10 TO 15 (KM)
JUNE INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-28.659	-29.072	.000	.000	.000	.000	.000	.000		
5.0	-26.415	-28.341	.000	.000	.000	.000	.000	.000		
10.0	-23.609	-27.472	.000	.000	.000	.000	.000	.000		
25.0	-8.380	-24.805	.000	.000	.000	.000	.000	.000		
50.0	-1.341	-12.702	.000	.000	.000	.000	.000	.000		
75.0	2.667	-5.042	.000	.000	.000	.000	.000	.000		
90.0	5.071	.157	.000	.000	.000	.000	.000	.000		
95.0	8.103	1.914	.000	.000	.000	.000	.000	.000		
99.0	11.421	3.319	.000	.000	.000	.000	.000	.000		
NO. OF OBS	274	175	0	0	0	0	0	0		

TABLE 6d (cont'd). ALTITUDE 10 TO 15 (KM)
JUNE INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)					
			4.5	6.0	7.5	9.0	10.5	12.0
1.0	-38.789	-36.507	.000	.000	.000	.000	.000	.000
5.0	-36.747	-36.134	.000	.000	.000	.000	.000	.000
10.0	-34.194	-35.667	.000	.000	.000	.000	.000	.000
25.0	-26.535	-34.380	.000	.000	.000	.000	.000	.000
50.0	4.759	-32.196	.000	.000	.000	.000	.000	.000
75.0	9.639	-30.268	.000	.000	.000	.000	.000	.000
90.0	12.568	-28.000	.000	.000	.000	.000	.000	.000
95.0	13.544	-26.943	.000	.000	.000	.000	.000	.000
99.0	14.325	-26.259	.000	.000	.000	.000	.000	.000
NO. OF OBS	148	108	0	0	0	0	0	0

TABLE 6e. ALTITUDE 15 TO 20 (KM)
JUNE INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-4.538	-6.406	-5.207	-5.783	-6.865	-5.766	-4.654
5.0	-2.565	-3.887	-3.296	-3.750	-3.227	-3.108	-3.172
10.0	-1.550	-2.270	-2.164	-2.372	-1.829	-1.530	-1.976
15.0	-1.482	-1.530	-1.579	-1.647	-1.318	-1.308	-1.430
50.0	.203	.022	.221	.200	.157	.781	.042
75.0	.943	.805	1.233	1.396	1.181	1.797	.629
90.0	2.075	1.919	3.141	3.027	3.234	3.224	1.137
95.0	2.979	2.746	4.638	4.355	6.826	6.078	1.496
99.0	5.398	5.768	7.370	7.728	9.542	9.084	3.114
NO. OF OBS	3458	2786	2074	1869	1347	1019	515
							326

ALTITUDE 15 TO 20 (KM)
JUNE INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-11.386	-14.395	-14.875	-15.256	-14.937	-14.897	-14.667
5.0	-9.825	-12.412	-7.416	-8.839	-12.730	-11.685	-13.094
10.0	-8.889	-9.991	-6.138	-7.216	-10.142	-11.026	-11.127
25.0	-3.831	-4.674	-4.190	-5.137	-5.868	-5.691	-7.072
50.0	-.935	-1.792	-1.034	-2.598	-3.568	-2.930	-3.852
75.0	.667	1.127	1.872	.721	.525	-.827	-1.296
90.0	2.086	3.513	4.456	4.439	4.332	.659	-.454
95.0	2.785	4.380	6.129	6.129	5.181	2.856	.015
99.0	3.593	5.492	7.793	7.648	6.179	6.987	.539
NO. OF OBS	611	576	293	300	225	145	80
							71

TABLE 6e (cont'd). ALTITUDE 15 TO 20 (KM)
 INITIAL WIND SPEED 20 TO 30 M/SEC
 WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-17.633	-21.697	-21.335	-18.643	-17.949	-16.183	-16.339	-7.254		
5.0	-15.157	-21.285	-20.677	-18.213	-17.586	-14.596	-16.015	-7.229		
10.0	-11.985	-20.771	-19.853	-17.675	-17.131	-12.612	-15.610	-7.199		
25.0	-10.529	-19.227	-17.384	-16.063	-15.768	-10.911	-14.395	-7.106		
50.0	-6.592	-16.655	-7.499	-10.851	-13.495	-9.494	-12.370	-7.004		
75.0	-0.283	-0.448	-0.178	-6.118	-6.425	-8.077	-9.737	-6.927		
90.0	2.006	2.977	1.963	.126	-4.102	-7.227	-7.915	-6.881		
95.0	2.522	4.118	2.676	2.160	-1.981	-6.943	-7.307	-6.865		
99.0	3.241	5.032	3.247	3.736	-0.284	-6.717	-6.821	-6.853		
NO. OF OBS	131	108	43	31	28	16	5	3		

TABLE 7a. ALTITUDE .2 TO 1 (KM)
JULY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)			9.0	10.5	12.0
			4.5	6.0	7.5			
1.0	-7.760	-6.232	-4.374	-7.294	-6.670	-7.166	-6.468	-4.225
5.0	-5.809	-3.681	-3.466	-5.510	-5.106	-6.810	-5.298	-5.964
10.0	-3.248	-2.737	-2.855	-4.529	-4.096	-6.366	-4.680	-5.395
25.0	-1.266	-1.778	-1.532	-2.208	-2.499	-1.042	-3.448	-1.846
50.0	-.290	-.234	.391	-.255	.552	.355	-.386	-.303
75.0	.809	1.235	2.941	2.246	2.383	1.670	1.800	1.337
90.0	2.749	3.956	4.446	4.337	5.680	3.006	5.035	2.998
95.0	4.057	6.044	5.007	5.687	7.874	3.626	6.852	4.180
99.0	5.224	7.988	5.976	8.152	10.824	4.943	9.803	5.753
NO. OF OBS	930	817	660	647	465	215	246	133

ALTITUDE .2 TO 1 (KM)
JULY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)			9.0	10.5	12.0
			4.5	6.0	7.5			
1.0	-10.295	-10.800	-10.080	-9.436	.050	1.393	.000	1.453
5.0	-9.797	-9.601	-8.275	-8.352	.448	1.523	.000	1.986
10.0	-9.174	-7.095	-6.956	-7.044	1.204	1.691	.000	2.653
25.0	-5.009	-1.754	-5.747	-1.647	2.422	2.581	.000	3.362
50.0	-.079	-.543	-1.114	.756	3.547	3.381	.000	3.990
75.0	2.786	.458	1.412	2.964	4.930	3.788	.000	4.267
90.0	3.520	1.398	3.090	3.555	5.723	4.266	.000	4.642
95.0	3.765	2.509	4.628	3.921	6.092	4.388	.000	4.857
99.0	3.961	3.550	5.759	4.256	6.490	4.486	.000	5.123
NO. OF OBS	95	126	119	91	27	31	0	31

TABLE 7b. ALTITUDE 1 TO 5 (KM)
JULY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.550	-2.794	-2.983	-4.138	-3.833	-4.108	-3.926	-4.898		
5.0	-1.965	-2.122	-2.253	-2.571	-3.103	-3.287	-3.356	-4.024		
10.0	-1.443	-1.656	-1.806	-2.174	-2.528	-2.647	-2.898	-3.426		
25.0	-0.683	-0.867	-0.879	-1.212	-1.355	-1.531	-1.582	-1.337		
50.0	0.090	0.119	0.143	-0.024	0.005	-0.057	-0.308	-0.230		
75.0	0.839	1.155	1.250	1.307	1.571	1.472	1.294	1.015		
90.0	1.643	2.021	2.187	2.381	2.923	2.396	2.284	2.303		
95.0	2.186	2.456	2.900	2.853	3.530	3.047	3.034	3.042		
99.0	3.171	3.225	4.218	3.481	4.804	4.054	4.022	4.223		
NO. OF OBS	3349	2900	2503	2234	1591	533	818	480		

ALTITUDE 1 TO 5 (KM)
JULY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.722	-4.266	-3.488	-6.094	-6.061	-3.636	-3.608	-5.892		
5.0	-3.938	-3.431	-2.888	-3.974	-5.348	-2.982	-2.975	-5.228		
10.0	-2.886	-3.049	-2.255	-3.224	-4.736	-2.616	-2.340	-4.425		
25.0	-1.490	-1.793	-1.477	-1.425	-2.917	-1.501	-1.082	-2.743		
50.0	-0.397	-0.472	-0.194	-0.288	0.018	-0.345	-0.077	-1.641		
75.0	0.398	0.589	0.827	0.634	0.823	0.826	0.819	0.672		
90.0	1.344	1.493	1.992	1.159	1.648	1.477	1.865	1.643		
95.0	1.764	2.215	2.823	1.407	2.278	1.847	2.210	2.214		
99.0	2.506	4.272	4.363	2.828	3.381	2.483	2.832	3.237		
NO. OF OBS	651	780	537	646	329	427	142	160		

TABLE 7c. ALTITUDE 5 TO 10 (KM)
JULY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.440	-4.311	-4.679	-5.285	-5.214	-5.489	-6.261	-3.804		
5.0	-2.694	-3.036	-3.321	-3.492	-4.285	-2.598	-3.883	-2.421		
10.0	-2.071	-2.339	-2.213	-2.813	-3.399	-1.955	-3.025	-1.691		
25.0	-0.907	-1.193	-0.946	-1.218	-1.372	-1.117	-1.699	-0.155		
50.0	.106	-0.001	.359	.141	.425	.565	-.118	1.113		
75.0	1.200	1.071	1.741	1.434	1.823	2.155	1.666	2.385		
90.0	2.349	2.120	3.291	2.772	2.710	3.434	3.170	3.720		
95.0	3.429	2.747	4.026	3.681	3.910	6.759	3.766	4.166		
99.0	5.304	4.169	6.474	5.733	5.321	10.305	4.507	6.150		
NO. OF OBS	2950	2599	2520	2253	1485	385	643	572		

ALTITUDE 5 TO 10 (KM)
JULY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.447	-6.180	-6.590	-7.325	-8.014	-7.595	-10.820	-8.538		
5.0	-3.293	-4.237	-5.571	-6.068	-7.108	-6.375	-9.367	-8.200		
10.0	-2.648	-3.686	-4.484	-4.978	-6.694	-5.597	-7.907	-7.507		
25.0	-1.587	-2.638	-3.006	-3.214	-5.135	-4.614	-6.103	-6.302		
50.0	-0.667	-1.280	-1.232	-1.690	-3.069	-2.868	-3.397	-3.164		
75.0	.277	.073	-.072	-.527	-1.014	-1.222	-1.353	-1.667		
90.0	1.071	1.203	1.191	.666	.563	.299	-.164	-.205		
95.0	1.670	1.890	2.039	1.503	1.465	1.033	.721	.668		
99.0	2.828	3.138	3.802	3.519	2.357	1.935	2.670	2.101		
NO. OF OBS	2004	1990	1234	1336	858	747	465	228		

TABLE 7c (cont'd) ALTITUDE 5 TO 10 (KM)
JULY INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.996	-2.755	-7.846	-4.987	-7.870	-10.941	-12.558	.000		
5.0	-5.940	-2.737	-7.790	-4.895	-7.752	-10.826	-11.831	.000		
10.0	-5.870	-2.715	-7.719	-4.781	-7.605	-10.683	-11.102	.000		
25.0	-5.660	-2.647	-7.508	-4.437	-7.161	-10.252	-10.253	.000		
50.0	-5.077	-2.535	-7.126	-3.864	-6.423	-6.481	-9.439	.000		
75.0	-4.003	-2.163	-5.796	-3.291	-5.230	-4.910	-6.761	.000		
90.0	-2.915	-2.005	-5.242	-2.291	-4.243	-4.363	-5.802	.000		
95.0	-2.747	-1.953	-4.961	-1.776	-2.987	-3.956	-5.491	.000		
99.0	-2.444	-1.911	-4.359	-1.363	-1.352	-3.314	-5.122	.000		
NO. OF OBS	46	11	46	11	57	68	92			0

TABLE 7d. ALTITUDE 10 TO 15 (KM)
JULY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.299	-4.761	-7.569	-5.982	-4.736	-8.005	-4.355	-4.881		
5.0	-3.832	-3.587	-5.506	-3.791	-3.256	-7.062	-3.973	-3.806		
10.0	-2.915	-2.970	-4.634	-2.384	-2.401	-5.041	-3.293	-2.409		
25.0	-1.284	-1.349	-2.243	-0.857	-0.643	-0.825	-1.395	-0.363		
50.0	.642	.581	.076	1.029	1.505	.662	-.395	1.037		
75.0	2.438	2.816	1.871	2.459	2.849	2.171	.925	2.289		
90.0	4.018	4.633	3.621	4.732	4.468	9.467	4.625	4.067		
95.0	4.980	5.650	5.025	5.701	6.031	10.893	7.381	6.564		
99.0	6.614	7.160	7.286	8.463	8.649	13.139	10.283	9.278		
NO. OF OBS	1684	1593	1453	1207	826	231	178	359		

ALTITUDE 10 TO 15 (KM)
JULY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.413	-8.958	-9.657	-10.835	-10.005	-12.590	-9.524	-7.977		
5.0	-3.850	-5.093	-6.378	-7.318	-8.387	-9.279	-8.507	-6.688		
10.0	-3.143	-4.112	-5.248	-5.760	-7.178	-7.870	-7.381	-5.610		
25.0	-1.721	-2.568	-3.556	-3.886	-4.683	-5.802	-4.573	-3.060		
50.0	-.535	-.956	-1.519	-1.665	-2.389	-3.097	-2.520	-1.147		
75.0	.783	.643	.192	.458	.220	-.589	-.355	.071		
90.0	2.240	2.209	1.919	2.323	1.925	1.749	1.434	2.156		
95.0	3.337	3.147	2.764	3.593	2.925	3.165	4.432	2.650		
99.0	5.347	5.279	5.485	4.944	4.281	7.613	6.563	4.926		
NO. OF OBS	2980	2964	2216	2364	1458	824	803	441		

TABLE 7d (cont'd). ALTITUDE 10 TO 15 (KM)
JULY INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-12.520	-10.158	-14.374	-14.660	-17.759	-15.021	-13.612	12.0		
5.0	-12.040	-9.671	-13.672	-14.021	-16.588	-14.466	-12.446	.000		
10.0	-11.324	-9.063	-12.735	-13.223	-15.594	-13.773	-12.036	.000		
25.0	-5.193	-7.237	-11.689	-10.827	-14.431	-11.692	-11.143	.000		
50.0	-3.108	-2.601	-8.729	-6.853	-11.607	-9.446	-9.839	.000		
75.0	-2.191	-.419	-4.734	-3.127	-7.425	-7.588	-7.884	.000		
90.0	-1.568	.798	-1.442	-.891	-6.557	-2.101	-5.605	.000		
95.0	-.929	1.204	-1.065	-.145	-6.160	-.021	-1.143	.000		
99.0	-.146	1.529	-.821	.451	-5.302	1.644	-.605	.000		
NO. OF OBS	136	43	131	29	116	145	219	0		

TABLE 7e. ALTITUDE 15 TO 20 (KM)
JULY INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-4.170	-6.908	-5.552	-7.156	-5.093	-6.342	10.5
5.0	-3.340	-4.429	-3.624	-4.505	-2.895	-2.886	-6.856
10.0	-2.143	-3.245	-2.662	-3.282	-1.822	-2.082	-4.623
25.0	-1.802	-1.322	-1.266	-1.431	-0.572	-1.146	-2.355
50.0	.268	.031	-.043	.202	.118	-.378	-0.704
75.0	1.765	1.542	.831	1.893	1.420	.305	-.034
90.0	3.494	3.066	2.962	3.644	3.451	1.091	.821
95.0	4.488	4.101	4.192	5.520	5.380	1.880	2.506
99.0	6.186	6.538	7.703	8.141	8.345	10.273	3.843
							11.453
NO. OF OBS	4639	4196	3436	3226	2173	1097	1142
							742

ALTITUDE 15 TO 20 (KM)
JULY INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-11.419	-12.628	-10.605	-10.762	-6.659	-8.130	10.5
5.0	-9.563	-11.133	-8.144	-8.275	-5.911	-7.052	-9.217
10.0	-5.869	-9.609	-7.199	-6.476	-5.581	-5.034	-8.245
25.0	-3.332	-5.979	-4.486	-4.510	-3.354	-3.565	-7.030
50.0	-.931	-2.386	-2.353	-2.660	-1.366	-1.924	-2.077
75.0	.955	.477	-.015	-.446	.658	-.801	2.478
90.0	2.677	2.607	2.133	3.759	4.091	.296	4.318
95.0	3.694	3.842	4.396	4.703	5.877	.745	5.099
99.0	5.059	5.974	5.645	6.412	6.750	1.781	5.360
							5.568
NO. OF OBS	361	404	364	374	227	103	58
							58

TABLE 8a. ALTITUDE .2 TO 1 (KM)
 AUG. INITIAL WIND SPEED 0 TO 10 M/SEC
 WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.874	-5.136	-6.873	-5.746	-8.156	-6.048	-7.351	.000		
5.0	-2.427	-4.127	-5.547	-5.250	-7.464	-5.601	-6.995	.000		
10.0	-1.687	-3.152	-3.960	-4.631	-6.281	-5.042	-6.550	.000		
25.0	-1.078	-1.437	-2.383	-3.529	-3.805	-3.783	-5.065	.000		
50.0	-.386	-.158	-.064	-2.248	-2.720	-2.291	-3.305	.000		
75.0	.344	.590	.242	-.907	-.495	-1.195	-1.630	.000		
90.0	1.049	1.385	1.445	.629	1.466	-.047	.650	.000		
95.0	1.545	1.747	2.467	1.799	2.704	.814	2.293	.000		
99.0	2.727	2.768	5.347	3.232	4.627	4.542	5.884	.000		
NO. OF OBS	410	492	369	328	246	123	82	0		

TABLE 8b. ALTITUDE 1 TO 5 (KM)
AUG. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.548	-3.870	-7.395	-5.527	-7.201	-4.646	-5.408	.000		
5.0	-2.292	-2.482	-5.333	-4.032	-5.021	-4.007	-4.964	.000		
10.0	-1.815	-1.936	-3.461	-3.316	-4.263	-3.650	-4.359	.000		
25.0	-1.225	-1.190	-2.151	-1.931	-3.004	-2.854	-2.835	.000		
50.0	-0.466	-0.150	-0.933	-0.636	-1.704	-1.063	-0.105	.000		
75.0	.349	1.062	.586	1.182	.462	2.464	3.179	.000		
90.0	1.154	2.132	1.884	2.848	3.247	4.307	5.131	.000		
95.0	1.587	2.864	2.374	4.439	4.309	5.419	5.467	.000		
99.0	2.366	3.879	3.975	5.607	5.767	6.111	5.925	.000		
NO. OF OBS	1400	1920	1421	1290	941	480	320	0		

TABLE 8c. ALTITUDE 5 TO 10 (KM)
AUG. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.307	-3.943	-4.578	-4.107	-5.585	-5.060	-3.006	.000		
5.0	-1.931	-2.297	-3.348	-3.069	-3.538	-2.084	-2.348	.000		
10.0	-1.428	-1.708	-2.372	-2.094	-2.783	-1.422	-1.867	.000		
25.0	-.713	-.845	-1.308	-.939	-1.568	-.377	-.939	.000		
50.0	-.057	.138	-.284	.561	-.354	.847	.619	.000		
75.0	.703	1.320	1.014	1.965	1.804	2.103	1.975	.000		
90.0	1.569	2.661	2.678	3.099	3.218	3.214	2.653	.000		
95.0	2.115	3.215	3.526	3.604	3.845	3.553	3.462	.000		
99.0	2.931	4.712	4.977	4.931	4.465	4.501	4.689	.000		
NO. OF OBS	1972	2382	1774	1584	1190	594	398	0		

ALTITUDE 5 TO 10 (KM)
AUG. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-2.265	-1.540	-2.958	-2.478	-3.792	-2.684	.000	.000		
5.0	-2.164	-1.499	-2.870	-2.350	-3.722	-2.641	.000	.000		
10.0	-2.037	-1.448	-2.759	-2.190	-3.634	-2.632	.000	.000		
25.0	-1.658	-1.286	-2.258	-1.835	-3.371	-2.546	.000	.000		
50.0	-.990	-.871	-1.450	-1.535	-2.405	-2.306	.000	.000		
75.0	-.304	-.230	-.812	-1.110	-1.585	-2.018	.000	.000		
90.0	.175	.056	-.251	-.590	-1.234	-1.845	.000	.000		
95.0	.364	.158	-.086	-.350	-1.117	-1.788	.000	.000		
99.0	.800	.240	.047	-.158	-1.023	-1.742	.000	.000		
NO. OF OBS	28	18	26	16	10	6	2	0		

TABLE 8d. ALTITUDE 10 TO 15 (KM)
AUG. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-3.744	-7.208	-6.394	-8.311	-7.261	-8.115	-6.207
5.0	-1.466	-5.803	-4.455	-6.989	-5.814	-7.236	-5.759
10.0	-0.983	-4.309	-3.461	-4.037	-4.728	-5.874	-4.614
25.0	-0.476	-1.917	-1.315	-1.525	-2.336	-4.039	-3.425
50.0	.547	-.531	.162	-.027	-1.034	-1.012	-2.571
75.0	3.048	.563	1.575	1.372	1.781	.648	-1.416
90.0	4.881	2.068	2.730	2.900	6.372	1.690	.137
95.0	6.039	2.979	3.186	4.582	7.643	2.229	1.089
99.0	7.350	3.904	4.810	6.359	10.870	4.727	2.737
NO. OF OBS	815	1118	818	784	628	299	195
							0

ALTITUDE 10 TO 15 (KM)
AUG. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-4.114	-12.248	-8.108	-13.155	-7.932	-12.577	-7.357
5.0	-2.676	-7.774	-3.843	-10.361	-4.081	-10.643	-5.677
10.0	-1.972	-3.063	-2.907	-6.620	-3.645	-9.897	-3.715
25.0	-1.028	-1.620	-2.120	-2.891	-2.339	-6.028	-2.282
50.0	-.382	-.335	-.832	-1.276	-.665	-2.110	-.941
75.0	.423	.676	.531	.387	.930	-.294	1.239
90.0	1.357	2.072	1.638	1.564	2.136	1.695	2.112
95.0	2.225	2.753	2.477	2.129	2.538	2.177	2.356
99.0	2.877	3.679	3.018	2.634	2.860	2.744	2.551
NO. OF OBS	1077	1153	896	694	486	273	166
							0

TABLE 8d (cont'd). ALTITUDE 10 TO 15 (KM)
AUG. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.038	-7.229	-6.674	-6.276	-6.384	-6.641	-6.345	.000		
5.0	-2.819	-6.210	-5.784	-5.773	-6.239	-6.284	-6.043	.000		
10.0	-2.547	-4.960	-3.835	-5.116	-5.957	-5.583	-5.298	.000		
25.0	-1.731	-3.782	-2.520	-4.227	-5.005	-4.394	-4.122	.000		
50.0	-1.065	-2.168	-1.811	-3.571	-4.063	-3.834	-3.835	.000		
75.0	-.485	-.912	-.492	-2.752	-3.211	-3.332	-3.457	.000		
90.0	.355	.021	.536	-1.553	-2.558	-2.865	-3.024	.000		
95.0	.899	.499	.913	-1.064	-2.302	-2.567	-2.802	.000		
99.0	1.996	1.356	1.503	-.665	-1.880	-2.329	-2.600	.000		
NO. OF OBS	108	129	86	122	86	28	39	0		

TABLE 8e. ALTITUDE 15 TO 20 (KM)
AUG. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)				9.0	10.5	12.0
			4.5	6.0	7.5	9.0			
1.0	-4.258	-6.120	-4.744	-5.221	-6.018	-4.803	-4.717	.000	.000
5.0	-2.594	-3.547	-2.466	-3.757	-4.148	-2.681	-1.156	.000	.000
10.0	-1.838	-2.449	-1.730	-2.614	-2.647	-.988	-.812	.000	.000
25.0	-.978	-1.056	-.891	-.336	-1.055	-.181	-.521	.000	.000
50.0	-.069	-.020	.860	.353	-.119	.652	-.037	.000	.000
75.0	.897	1.046	1.444	1.645	.336	1.753	.447	.000	.000
90.0	2.254	3.609	2.569	4.031	2.646	5.149	3.939	.000	.000
95.0	2.970	4.976	3.185	5.768	3.849	5.928	6.058	.000	.000
99.0	4.240	6.998	4.225	7.075	6.541	8.315	8.382	.000	.000
NO. OF OBS	1637	2047	1495	1404	1006	560	327	0	0

ALTITUDE 15 TO 20 (KM)
AUG. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	4.5	Time Differences (Hours)				9.0	10.5	12.0
				6.0	7.5	9.0	10.5			
1.0	-7.897	-11.451	-11.926	-11.365	-13.004	-7.866	-12.844	.000	.000	.000
5.0	-6.860	-8.619	-9.942	-10.236	-11.622	-7.731	-11.700	.000	.000	.000
10.0	-5.704	-7.578	-8.497	-8.509	-11.030	-7.561	-11.269	.000	.000	.000
25.0	-3.709	-4.579	-6.438	-6.402	-9.466	-7.053	-8.989	.000	.000	.000
50.0	-2.136	-3.010	-4.341	-4.930	-7.382	-6.206	-7.336	.000	.000	.000
75.0	-.643	-1.317	-2.625	-3.698	-4.825	-5.359	-6.126	.000	.000	.000
90.0	.450	-.247	-.953	-2.295	-1.785	-3.521	-3.853	.000	.000	.000
95.0	1.158	.659	-.035	-1.532	-.710	-2.843	-1.271	.000	.000	.000
99.0	4.998	4.148	.794	.782	.362	-.758	-.238	.000	.000	.000
NO. OF OBS	306	283	253	133	142	26	51	0	0	0

TABLE 8e (cont'd). ALTITUDE 15 TO 20 (KM)
 AUG. INITIAL WIND SPEED 20 TO 30 M/SEC
 WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.571	-6.153	-5.188	-7.897	-8.673	-8.527	-10.121	.000		
5.0	-3.373	-5.791	-4.819	-7.683	-8.565	-8.437	-10.084	.000		
10.0	-3.055	-5.477	-4.414	-7.350	-8.430	-8.324	-10.038	.000		
25.0	-2.463	-4.540	-3.743	-6.154	-7.580	-7.984	-9.900	.000		
50.0	-1.508	-2.789	-2.915	-5.225	-6.989	-7.661	-9.669	.000		
75.0	-.617	-1.574	-2.267	-4.910	-6.033	-7.311	-9.175	.000		
90.0	.219	-.559	-1.701	-3.458	-5.013	-6.836	-7.716	.000		
95.0	.689	-.180	-1.287	-3.054	-3.847	-6.723	-7.163	.000		
99.0	.986	.020	-.713	-2.394	-3.221	-6.633	-6.721	.000		
NO. OF OBS	57	70	52	63	52	14	22	0		

TABLE 9a. ALTITUDE 2 TO 1 (KM)
SEPT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-7.336	-6.314	-6.623	-5.571	-5.633	-4.968	-3.269	-2.887		
5.0	-3.837	-3.341	-3.673	-3.711	-4.840	-4.284	-2.064	-1.638		
10.0	-1.948	-1.852	-2.138	-2.251	-3.504	-3.747	-1.141	-0.554		
25.0	-0.596	-0.605	-0.714	-0.280	-1.225	-1.806	0.441	0.910		
50.0	0.226	0.509	0.522	1.129	0.471	0.620	2.569	3.214		
75.0	1.052	1.853	2.121	3.002	3.407	3.431	4.701	4.926		
90.0	2.034	4.491	3.483	4.593	4.908	4.859	5.957	5.786		
95.0	3.209	7.113	4.383	5.180	5.545	5.604	7.004	6.477		
99.0	4.784	9.551	7.025	6.582	6.406	6.663	8.873	7.078		
NO. OF OBS	2224	1819	1317	897	737	369	328	164		

TABLE 9b. ALTITUDE 2 TO 1 (KM)
SEPT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-9.519	-2.492	-2.226	-1.371	0.000	0.000	0.000	0.000		
5.0	-8.435	-2.422	-2.099	-1.336	0.000	0.000	0.000	0.000		
10.0	-7.089	-2.333	-1.920	-1.293	0.000	0.000	0.000	0.000		
25.0	-2.427	-2.128	-1.553	-1.161	0.000	0.000	0.000	0.000		
50.0	-1.385	-1.746	-1.128	-0.943	0.000	0.000	0.000	0.000		
75.0	-0.342	-1.508	-0.764	-0.724	0.000	0.000	0.000	0.000		
90.0	0.283	-1.247	-0.449	-0.505	0.000	0.000	0.000	0.000		
95.0	0.492	-1.114	0.061	-0.417	0.000	0.000	0.000	0.000		
99.0	0.658	-0.933	0.468	-0.347	0.000	0.000	0.000	0.000		
NO. OF OBS	31	26	36	5	1	0	0	0		

TABLE 9b. ALTITUDE 1 TO 5 (KM)
SEPT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-5.724	-4.245	-5.446	-5.723	-5.947	-6.475	-3.929	-5.030
5.0	-2.852	-2.646	-2.964	-3.598	-3.933	-4.195	-2.816	-4.331
10.0	-1.899	-1.925	-2.166	-2.343	-2.933	-3.449	-2.294	-3.561
25.0	-0.823	-0.710	-0.859	-0.801	-1.092	-1.604	-0.762	-0.315
50.0	0.185	0.554	0.777	1.067	0.718	0.831	2.340	2.301
75.0	1.143	1.795	2.192	2.662	2.979	3.189	4.894	4.311
90.0	2.212	3.128	3.570	4.126	4.511	4.669	6.427	5.426
95.0	2.975	4.002	4.358	5.095	5.447	5.639	7.081	6.738
99.0	4.323	5.469	5.856	6.594	7.522	7.098	9.027	8.307
NO. OF OBS	7119	6143	4141	2906	2329	1194	1051	535

ALTITUDE 1 TO 5 (KM)
SEPT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-4.198	-3.698	-7.497	-7.574	-9.211	-7.462	-6.095	-5.233
5.0	-4.201	-2.785	-4.988	-5.618	-7.626	-5.667	-5.520	-4.966
10.0	-3.145	-2.039	-3.628	-3.835	-6.777	-3.328	-4.662	-4.632
25.0	-1.582	-0.994	-2.126	-1.614	-3.396	-1.705	-2.608	-4.092
50.0	-0.348	-0.114	-0.464	-0.330	-1.080	-0.503	-0.469	-2.442
75.0	0.424	0.822	0.498	0.665	0.369	1.013	0.830	0.047
90.0	1.122	1.741	2.108	2.509	2.566	3.308	2.591	4.570
95.0	1.632	2.291	2.961	3.477	3.217	3.837	3.576	5.288
99.0	2.803	3.066	4.126	4.494	4.227	4.319	5.406	5.778
NO. OF OBS	1690	1057	1139	614	551	246	229	105

TABLE 9c. ALTITUDE 5 TO 10 (KM)
SEPT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-3.844	-3.599	-3.922	-4.449	-5.491
5.0	-2.574	-2.463	-3.022	-3.481	-3.440
10.0	-1.930	-1.827	-2.384	-2.563	-2.248
25.0	-1.879	-1.743	-1.008	-1.850	-2.238
50.0	.265	.612	.743	.926	1.795
75.0	1.312	1.940	2.543	3.085	4.177
90.0	2.334	3.122	4.279	5.249	5.852
95.0	3.153	3.826	5.082	6.092	6.980
99.0	4.282	5.204	6.434	7.378	8.404
NO. OF OBS	6789	5371	3867	2896	2170
					1071
					883
					436

12.0
-4.908
-3.960
-2.758
-1.719
1.227
3.068
6.924
8.751
9.745

17.5
-4.743
-3.821
-2.788
-1.482
2.331
4.603
6.627
7.849
9.324

9.0
-3.434
-1.518
-1.753
.503
2.792
5.027
6.408
7.586
8.836

ALTITUDE 5 TO 10 (KM)
SEPT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-4.727	-6.098	-4.164	-8.174	-7.185
5.0	-3.123	-4.593	-4.897	-5.510	-5.710
10.0	-2.239	-3.672	-4.030	-4.530	-4.572
25.0	-1.158	-2.292	-2.551	-2.995	-2.544
50.0	-1.121	-1.801	-1.906	-1.291	-1.490
75.0	1.001	.586	.677	.385	1.858
90.0	1.937	2.344	3.731	2.016	4.066
95.0	2.461	3.710	4.726	3.143	5.257
99.0	4.054	5.509	6.778	5.266	7.059
NO. OF OBS	4206	3620	2733	1504	1430
					729
					717
					364

12.0
-9.667
-8.036
-6.167
-3.547
.339
2.343
4.231
5.391
9.268

17.5
-8.476
-6.210
-5.298
-2.759
-1.604
1.117
2.543
3.856
6.167

9.0
-6.327
-5.131
-4.324
-2.212
-1.595
1.294
3.157
4.649
7.979

TABLE 9d. ALTITUDE 10 TO 15 (KM)
SEPT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-7.149	-5.136	-2.958	-4.406	-3.647	-3.528	-4.455	-4.253
5.0	-3.690	-3.782	-1.010	-1.193	1.273	.459	-2.301	-3.867
10.0	-2.965	-2.958	.294	.755	2.207	4.149	-.635	-3.384
25.0	-1.404	-.760	.965	2.860	4.629	5.267	4.532	-1.936
50.0	.345	1.980	3.077	5.228	6.334	7.068	7.352	.479
75.0	2.211	3.809	5.328	6.636	7.424	8.536	8.787	2.893
90.0	4.701	5.523	6.975	8.264	9.636	9.417	9.622	5.790
95.0	6.518	6.462	7.843	9.725	11.447	10.157	10.206	9.170
99.0	12.282	9.279	10.848	10.946	12.764	11.991	10.800	11.874
NO. OF OBS	2653	2000	1506	1026	831	425	290	32

ALTITUDE 10 TO 15 (KM)
SEPT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-12.734	-9.698	-11.148	-11.045	-12.582	-12.220	-13.000	-12.110
5.0	-5.281	-5.644	-6.283	-7.059	-6.079	-10.732	-10.014	-11.100
10.0	-2.912	-3.249	-3.698	-4.417	-4.601	-8.121	-5.946	-9.043
25.0	-1.214	-.951	-.732	-.826	-1.212	-1.878	-3.077	-5.192
50.0	.261	.912	1.269	1.526	1.544	1.319	-.614	-2.792
75.0	1.461	2.550	3.027	3.564	4.083	4.041	3.152	.811
90.0	2.699	4.322	4.881	5.348	5.825	6.194	5.732	6.012
95.0	3.629	6.117	6.285	6.357	6.907	7.745	7.539	9.643
99.0	6.500	10.249	10.341	11.169	9.221	10.017	10.974	12.118
NO. OF OBS	7023	5806	4493	2936	2290	1065	1016	549

TABLE 9d. ALTITUDE 10 TO 15 (KM)
SEPT. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-9.809	-12.230	-11.117	-13.178	-12.535	-10.823	-11.744
5.0	-7.056	-8.446	-9.396	-11.137	-9.716	-9.360	-10.537
10.0	-5.613	-6.540	-7.798	-7.234	-6.625	-7.089	-9.656
25.0	-2.434	-4.035	-4.560	-4.361	-1.407	-1.962	-3.055
50.0	-0.870	-1.693	-1.566	-1.158	1.475	.782	.256
75.0	.540	.388	.736	1.237	3.953	3.386	3.350
90.0	2.195	1.888	2.769	5.003	7.624	5.790	4.914
95.0	3.196	2.404	3.510	6.802	9.420	6.646	5.927
99.0	6.989	3.428	5.289	10.405	11.239	7.659	7.320
NO. OF OBS	1269	1036	573	438	479	310	294
							219

ALTITUDE 10 TO 15 (KM)
SEPT. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.311	-7.787	-7.367	.000	.000	.000	.000
5.0	-7.115	-7.190	-7.195	.000	.000	.000	.000
10.0	-6.872	-6.897	-6.980	.000	.000	.000	.000
25.0	-5.884	-6.254	-6.471	.000	.000	.000	.000
50.0	-3.196	-5.435	-5.873	.000	.000	.000	.000
75.0	-1.267	-4.639	-5.105	.000	.000	.000	.000
90.0	.408	-4.070	-4.183	.000	.000	.000	.000
95.0	.913	-3.803	-3.338	.000	.000	.000	.000
99.0	1.255	-3.441	-2.998	.000	.000	.000	.000
NO. OF OBS	55	68	29	0	0	0	0
							0

TABLE 9e. ALTITUDE 15 TO 20 (KM)
SEPT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.555	-6.161	-5.273	-5.459	-5.563	-4.842	-4.995	-4.730		
5.0	-3.617	-3.480	-3.073	-3.687	-3.773	-3.242	-2.907	-2.749		
10.0	-2.610	-2.434	-2.213	-2.881	-2.694	-2.492	-1.740	-2.143		
25.0	-1.239	-1.042	-.881	-1.142	-.837	-.999	-.149	-.914		
50.0	-.026	.199	.187	-.004	.127	.557	.739	.434		
75.0	1.248	1.590	1.599	1.625	1.501	2.850	2.552	4.495		
90.0	2.788	3.266	3.861	3.642	4.455	5.310	5.756	6.687		
95.0	4.087	4.425	5.170	4.860	5.929	6.436	7.730	7.948		
99.0	6.468	6.941	7.397	7.987	8.364	8.719	11.142	12.538		
NO. OF OBS	9166	7497	5437	3661	3041	1500	1300	665		

ALTITUDE 15 TO 20 (KM)
SEPT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-10.760	-10.207	-10.189	-8.543	-9.381	-8.292	-9.746	-10.594		
5.0	-8.097	-8.067	-8.473	-6.108	-7.547	-7.116	-8.844	-9.381		
10.0	-5.815	-5.211	-7.556	-4.822	-6.102	-6.114	-7.007	-7.863		
25.0	-2.424	-2.035	-4.723	-3.050	-4.193	-4.249	-4.847	-5.262		
50.0	-.864	.002	-1.975	-1.409	-1.694	-1.638	-2.584	-1.960		
75.0	.804	2.135	1.132	1.330	1.313	2.221	1.065	5.267		
90.0	3.076	5.519	7.025	10.234	3.161	4.287	6.953	10.475		
95.0	8.276	9.881	11.133	11.927	4.056	5.765	10.829	12.528		
99.0	14.040	12.810	13.820	13.938	7.630	8.037	12.070	13.946		
NO. OF OBS	1430	1170	904	577	397	192	247	135		

TABLE 9e (cont'd). ALTITUDE 15 TO 20 (KM)
 SEPT. INITIAL WIND SPEED 20 TO 30 M/SEC
 WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-14.406	-14.995	-14.146	-7.658	-5.425	-5.406	-4.817	.000		
5.0	-13.111	-13.204	-12.805	-5.116	-4.849	-5.002	-4.525	.000		
10.0	-12.070	-12.280	-12.357	-4.590	-4.432	-4.676	-4.160	.000		
25.0	-8.789	-9.890	-10.551	-2.846	-3.204	-2.971	-2.341	.000		
50.0	-6.808	-6.697	-3.718	-6.997	-5.70	-1.480	-1.366	.000		
75.0	.673	.813	.296	1.878	2.028	2.390	2.034	.000		
90.0	1.488	1.708	1.978	2.881	2.661	2.897	2.647	.000		
95.0	1.759	2.305	2.899	3.409	3.096	3.135	3.571	.000		
99.0	2.818	2.893	3.862	3.858	3.612	3.549	4.334	.000		
NO. OF OBS	404	333	259	162	162	108	53	0		

TABLE 10a. ALTITUDE 2 TO 1 (KM)
OCT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.820	-6.599	-6.602	-4.398	-7.764	-4.601	-8.257	-7.226		
5.0	-3.676	-4.850	-5.126	-3.238	-4.916	-4.040	-7.021	-6.609		
10.0	-2.495	-3.276	-3.071	-2.514	-3.978	-3.335	-6.160	-6.064		
25.0	-1.110	-1.593	-1.428	-0.870	-2.412	-0.872	-4.924	-4.482		
50.0	-0.056	-0.096	.009	.305	-0.542	.272	-2.181	-0.565		
75.0	1.106	1.458	2.098	2.538	.904	1.358	-0.379	1.605		
90.0	3.729	3.285	3.828	4.521	2.702	2.371	.507	2.367		
95.0	5.699	4.555	4.943	5.577	3.741	2.877	.893	2.664		
99.0	8.568	6.681	6.093	7.146	5.745	3.391	1.387	2.901		
NO. OF OBS	1142	989	768	600	317	268	177	82		

ALTITUDE 2 TO 1 (KM)
OCT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-8.860	-11.294	-7.398	-12.728	-11.087	-6.058	-8.858	.000		
5.0	-8.542	-10.788	-6.849	-11.852	-10.313	-5.889	-8.611	.000		
10.0	-8.145	-9.953	-6.019	-10.986	-9.346	-5.678	-8.303	.000		
25.0	-5.627	-8.737	-4.294	-9.775	-8.527	-5.249	-7.608	.000		
50.0	-0.905	-6.780	-2.624	-7.122	-6.481	-4.694	-7.222	.000		
75.0	.445	-2.715	-1.179	-3.853	-5.030	-3.603	-6.836	.000		
90.0	.904	.759	.826	-2.593	-3.524	-2.504	-6.604	.000		
95.0	1.057	1.088	1.178	-2.253	-1.087	-2.082	-6.527	.000		
99.0	1.179	1.594	1.460	-1.995	-0.313	-1.744	-6.465	.000		
NO. OF OBS	47	77	52	56	52	19	5	0		

TABLE 10b. ALTITUDE 1 TO 5 (KM)
OCT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.091	-4.619	-4.908	-5.945	-6.608	-5.692	-4.916	-3.591		
5.0	-2.483	-3.211	-3.938	-3.977	-4.682	-4.581	-4.251	-2.908		
10.0	-1.926	-2.588	-3.214	-3.118	-3.856	-3.883	-3.884	-1.748		
25.0	-1.028	-1.502	-2.091	-2.010	-2.509	-2.107	-2.930	-0.447		
50.0	-0.095	-0.251	-0.701	-0.757	-1.090	-0.604	-1.045	0.688		
75.0	0.899	0.823	0.695	0.986	0.406	0.742	0.253	1.804		
90.0	1.997	1.826	1.763	2.801	1.772	2.275	1.787	3.174		
95.0	2.923	2.498	2.539	3.721	2.645	4.328	2.287	6.211		
99.0	4.174	3.973	4.562	4.901	4.631	5.620	2.999	7.425		
NO. OF OBS	4266	3669	2997	2243	1413	1819	320	320		

ALTITUDE 1 TO 5 (KM)
OCT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.362	-6.342	-5.165	-7.839	-7.522	-3.173	0.000	0.000		
5.0	-3.357	-3.738	-4.494	-4.980	-7.290	-2.905	0.000	0.000		
10.0	-2.513	-2.705	-3.458	-3.447	-7.008	-2.571	0.000	0.000		
25.0	-0.836	-1.201	-1.717	-2.255	-6.330	-1.506	0.000	0.000		
50.0	0.379	1.119	2.305	2.322	-5.691	5.078	0.000	0.000		
75.0	1.816	3.942	4.617	6.040	-4.113	10.093	0.000	0.000		
90.0	2.971	5.349	6.349	8.912	-3.516	11.704	0.000	0.000		
95.0	3.542	5.958	7.494	9.516	-2.855	12.182	0.000	0.000		
99.0	4.294	6.771	8.883	10.743	-2.507	12.564	0.000	0.000		
NO. OF OBS	368	478	203	317	27	101	0	0		

TABLE 10c. ALTITUDE 5 TO 10 (KM)
OCT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.710	-4.656	-4.758	-5.045	-4.820	-4.752	-4.377	-5.562		
5.0	-2.925	-3.435	-3.616	-4.094	-3.776	-3.735	-3.707	-3.422		
10.0	-2.120	-2.468	-2.827	-3.220	-3.028	-3.051	-2.774	-2.776		
25.0	-0.962	-1.155	-1.304	-1.460	-1.484	-0.898	-1.374	-1.366		
50.0	0.092	0.279	0.181	0.334	0.605	0.805	0.423	0.998		
75.0	1.159	1.619	1.723	1.988	2.101	2.343	2.057	2.636		
90.0	2.268	2.779	2.977	3.788	3.760	3.898	2.742	4.385		
95.0	2.970	3.448	3.724	4.763	5.097	4.850	3.181	5.866		
99.0	5.355	5.566	6.699	7.215	6.688	6.368	4.325	8.385		
NO. OF OBS	3686	3244	2863	1986	1531	879	338	266		

ALTITUDE 5 TO 10 (KM)
OCT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-6.065	-6.731	-8.486	-7.398	-5.061	-3.488	-8.868	-6.633		
5.0	-4.830	-3.915	-5.826	-5.206	-4.571	-2.638	-8.082	-5.684		
10.0	-3.381	-3.176	-4.153	-3.873	-4.168	-2.292	-6.645	-4.498		
25.0	-1.477	-1.563	-2.232	-2.055	-2.529	-1.178	-5.730	1.563		
50.0	-0.332	-0.015	-0.631	1.013	0.230	3.164	-4.386	5.020		
75.0	0.685	2.502	1.048	5.048	2.931	4.883	-2.098	6.775		
90.0	2.039	4.373	4.035	7.546	4.407	5.773	0.479	7.828		
95.0	2.788	5.445	5.177	8.710	4.632	9.551	0.964	8.179		
99.0	3.747	7.182	7.222	10.918	5.115	13.184	1.401	8.460		
NO. OF OBS	1189	1036	790	757	269	375	62	134		

TABLE 10c (cont) ALTITUDE 5 TO 10 (KM)
OCT. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-2.611	-3.447	-2.827	-2.809	.000	.631	.000	.000		
5.0	-2.004	-1.871	-1.619	-.865	.000	1.141	.000	.000		
10.0	-1.626	-1.263	-.688	.129	.000	1.650	.000	.000		
25.0	-.785	-.222	.297	1.305	.000	2.500	.000	.000		
50.0	.340	1.036	1.599	2.780	.000	3.183	.000	.000		
75.0	1.340	2.216	3.031	3.815	.000	4.488	.000	.000		
90.0	2.111	3.250	4.207	4.769	.000	6.952	.000	.000		
95.0	2.655	4.006	4.797	5.541	.000	7.482	.000	.000		
99.0	3.488	5.034	5.249	6.594	.000	7.800	.000	.000		
NO. OF OBS	772	754	282	381	0	121	0	0		

ALTITUDE 5 TO 10 (KM)
OCT. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-1.564	-4.252	-3.198	-.499	.000	2.230	.000	.000		
5.0	-1.204	-3.389	-2.871	.185	.000	2.392	.000	.000		
10.0	-.883	-2.810	-2.462	1.400	.000	2.595	.000	.000		
25.0	-.153	.154	-.448	3.421	.000	3.282	.000	.000		
50.0	1.146	2.587	3.417	4.938	.000	4.051	.000	.000		
75.0	2.377	4.207	5.085	6.305	.000	4.598	.000	.000		
90.0	3.628	5.296	5.972	7.070	.000	6.155	.000	.000		
95.0	4.016	5.723	6.381	7.314	.000	6.358	.000	.000		
99.0	5.531	6.623	6.708	8.546	.000	6.520	.000	.000		
NO. OF OBS	152	145	65	76	0	25	0	0		

TABLE 10d.
OCT. ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.078	-5.748	-7.275	-6.890	-6.815	-6.230	18.500
5.0	-3.151	-4.640	-5.788	-5.442	-5.673	-5.632	18.620
10.0	-2.347	-3.663	-3.992	-4.232	-4.912	-4.884	18.769
25.0	-1.165	-1.658	-2.288	-2.415	-3.244	-2.640	19.328
50.0	.050	.824	.100	-.736	-.734	.645	20.977
75.0	1.538	3.351	2.992	3.201	1.263	4.389	22.395
90.0	2.805	4.915	5.724	7.255	7.671	15.890	22.771
95.0	3.874	6.446	7.028	10.237	13.864	19.410	22.996
99.0	5.780	10.162	10.733	15.351	16.221	22.226	23.175
NO. OF OBS	1473	1420	1009	721	493	245	17
							2

OCT. ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.943	-10.402	-11.603	-9.230	-12.560	-13.860	-15.578
5.0	-4.611	-7.291	-9.477	-7.691	-10.697	-11.679	-12.490
10.0	-3.730	-6.116	-8.098	-6.683	-9.284	-9.033	-10.251
25.0	-1.964	-3.584	-5.641	-3.011	-5.557	-5.161	-6.816
50.0	-.132	-.828	-2.121	.218	-.870	-.516	-.288
75.0	1.802	2.563	2.631	5.669	4.414	6.264	2.648
90.0	3.568	5.718	6.790	9.763	9.301	10.007	11.398
95.0	4.557	7.426	8.768	12.257	12.104	12.398	14.185
99.0	6.670	11.694	13.649	17.830	17.519	16.606	18.024
NO. OF OBS	2122	1799	1998	1296	1078	626	322
							245

TABLE 10d (cont'd). ALTITUDE 10 TO 15 (KM)
OCT. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-9.796	-11.004	-14.844	-12.461	-19.241	-17.570	-14.543	-14.948		
5.0	-4.821	-9.897	-11.262	-10.145	-18.193	-15.700	-14.194	-13.663		
10.0	-3.093	-8.556	-10.197	-8.825	-17.027	-13.796	-13.758	-12.654		
25.0	-0.909	-3.789	-8.665	-6.090	-13.072	-8.208	-12.451	-9.907		
50.0	.717	-.181	-2.946	-1.231	-.447	-4.445	-10.272	-6.808		
75.0	2.395	2.142	1.831	2.200	3.948	2.723	-8.092	-3.871		
90.0	3.512	3.773	3.457	3.921	6.104	5.550	-4.302	-2.176		
95.0	4.198	4.865	4.660	5.084	8.914	6.380	-2.321	.087		
99.0	6.171	8.014	7.552	10.821	12.727	7.630	-7.736	1.698		
NO. OF OBS	1186	1115	732	653	229	358	61	153		

ALTITUDE 10 TO 15 (KM)
OCT. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-7.430	-11.846	-15.620	-14.699	.000	-9.753	.000	.000		
5.0	-4.216	-10.489	-14.382	-12.593	.000	-8.363	.000	.000		
10.0	-2.265	-5.728	-13.124	-9.488	.000	-7.504	.000	.000		
25.0	-.515	-2.978	-5.525	-4.234	.000	-5.754	.000	.000		
50.0	.582	-.537	-1.174	-.171	.000	-.301	.000	.000		
75.0	1.370	1.138	1.134	2.317	.000	1.579	.000	.000		
90.0	2.394	2.460	3.795	4.129	.000	2.617	.000	.000		
95.0	2.864	2.978	4.012	5.768	.000	2.903	.000	.000		
99.0	4.764	4.407	4.708	6.767	.000	3.133	.000	.000		
NO. OF OBS	697	497	186	298	0	91	0	0		

TABLE 10d (cont'd). ALTITUDE 10 TO 15 (KM)
OCT. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LFVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.044	-6.394	-6.703	-8.483	.000	-5.781	.000	.000		
5.0	-3.309	-5.530	-5.339	-7.165	.000	-5.626	.000	.000		
10.0	-2.847	-4.417	-4.204	-5.783	.000	-5.432	.000	.000		
25.0	-1.870	-2.801	-3.238	-3.941	.000	-4.938	.000	.000		
50.0	-1.972	-1.348	-1.997	-2.626	.000	-4.225	.000	.000		
75.0	-.084	-.226	-.976	-1.389	.000	-3.218	.000	.000		
90.0	.728	1.056	.745	-.537	.000	-2.427	.000	.000		
95.0	1.239	1.749	1.289	.071	.000	-1.748	.000	.000		
99.0	3.315	3.606	1.750	.859	.000	-1.001	.000	.000		
NO. OF OBS	332	369	175	232	0	80	0	0		

TABLE 10e. ALTITUDE 15 TO 20 (KM)
OCT. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-5.457	-5.666	-5.582	-4.934	-3.968	-7.114	-0.072	-4.344		
5.0	-3.389	-3.743	-4.175	-3.512	-2.688	-4.564	.002	-3.912		
10.0	-2.196	-2.691	-3.245	-2.778	-1.958	-3.338	.094	-3.339		
25.0	-.815	-.792	-1.781	-1.056	-.578	-.845	.367	-2.521		
50.0	.057	.721	.439	.492	.279	.067	.767	-1.559		
75.0	1.298	1.829	1.497	2.566	1.537	2.329	7.345	-.640		
90.0	3.612	4.292	4.695	6.143	4.467	5.326	9.651	-.019		
95.0	5.671	6.093	7.232	8.178	5.502	6.463	10.772	.624		
99.0	8.550	9.118	10.994	12.325	7.008	7.632	11.967	1.480		
NO. OF OBS	4207	3915	2976	2340	1471	984	308	254		

ALTITUDE 15 TO 20 (KM)
OCT. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-8.755	-11.925	-13.119	-12.240	-14.465	-14.079	-11.501	-8.921		
5.0	-6.995	-9.075	-11.566	-10.732	-13.573	-13.182	-10.019	-8.371		
10.0	-6.301	-8.045	-10.576	-9.531	-12.659	-11.553	-8.954	-7.923		
25.0	-4.628	-5.665	-7.546	-6.478	-8.473	-9.304	-7.254	-6.636		
50.0	-1.773	-2.200	-4.552	-3.371	-4.285	-5.484	-5.038	-5.672		
75.0	.318	.424	-1.294	-.324	-.173	-2.574	-1.922	-4.928		
90.0	1.502	3.452	1.364	3.298	5.012	-.216	-.068	-3.868		
95.0	2.786	6.338	4.112	5.152	6.407	.646	2.041	-3.001		
99.0	6.695	9.898	6.722	8.016	8.518	2.370	3.571	-1.775		
NO. OF OBS	1151	969	849	627	325	344	92	142		

TABLE 10e (cont'd). ALTITUDE 15 TO 20 (KM)
OCT. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-10.261	-12.765	-14.257	-12.367	.406	-10.298	.000	-9.736		
5.0	-9.441	-10.798	-13.884	-11.763	.429	-9.331	.000	-9.721		
10.0	-8.547	-9.141	-12.552	-9.790	.459	-7.585	.000	-9.702		
25.0	-7.035	-6.042	-8.316	-7.302	.547	-2.673	.000	-9.645		
50.0	-1.521	-2.266	-.735	-3.164	.695	.972	.000	-9.550		
75.0	.850	1.760	1.585	1.229	.842	3.189	.000	-9.360		
90.0	2.283	3.914	3.966	3.086	.931	5.510	.000	-9.246		
95.0	2.903	4.921	5.794	3.920	.960	6.229	.000	-9.208		
99.0	4.032	6.902	6.303	5.827	.984	6.782	.000	-9.178		
NO. OF OBS	442	316	175	233	4	72	8			4

TABLE 11a. ALTITUDE 2' TO 1 (KM)
NOV. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS		Time Differences (Hours)							
		3.0	4.5	6.0	7.5	9.0	10.5	12.0	
1.0	1.5	-5.794	-6.119	-7.968	-4.884	-5.270	-6.547	.000	
5.0	-3.914	-3.827	-4.527	-6.516	-5.557	-1.419	-4.693	.000	
10.0	-2.659	-2.351	-3.625	-5.082	-4.266	-.907	-2.911	.000	
25.0	-1.804	-.960	-.803	-1.315	-1.865	.022	-1.129	.000	
50.0	-.466	.474	.618	.279	.133	.843	.712	.000	
75.0	.415	1.974	2.319	1.789	1.323	4.169	3.817	.000	
90.0	1.848	4.172	10.133	3.630	2.748	6.197	4.449	.000	
95.0	5.302	7.140	11.486	6.273	3.492	7.789	4.659	.000	
99.0	7.337	11.330	13.589	10.477	4.417	8.890	4.828	.000	
NO. OF OBS	725	477	420	404	299	129	39	0	

TABLE 11b. ALTITUDE 2' TO 1 (KM)
NOV. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS		Time Differences (Hours)							
		3.0	4.5	6.0	7.5	9.0	10.5	12.0	
1.0	1.5	-13.297	-13.795	-11.254	-10.451	-16.229	-16.291	.000	
5.0	-15.889	-10.643	-11.501	-10.508	-9.186	-15.546	-15.976	.000	
10.0	-8.983	-8.629	-10.571	-9.147	-7.965	-14.691	-15.582	.000	
25.0	-5.907	-3.219	-6.106	-5.951	-6.300	-4.630	-14.400	.000	
50.0	-2.674	-1.128	-1.303	-.471	-1.612	-2.508	-12.430	.000	
75.0	-.875	1.020	.511	.467	-.514	-1.084	-3.762	.000	
90.0	.729	2.502	1.385	1.700	.183	-.230	-1.871	.000	
95.0	2.148	4.249	1.683	2.599	.468	.055	-1.240	.000	
99.0	3.290	6.819	2.375	3.695	1.600	.283	-.736	.000	
NO. OF OBS	4.542	379	245	218	120	49	16	0	

TABLE 11a (cont'd). ALTITUDE .2 TO 1 (KM)
NOV. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-19.442	-12.960	-13.079	-12.016	-15.075	-18.824	-18.784	.000		
5.0	-19.209	-12.371	-12.953	-11.440	-14.895	-18.720	-18.679	.000		
10.0	-18.915	-11.970	-12.797	-10.721	-14.671	-18.589	-18.547	.000		
25.0	-18.039	-10.246	-11.935	-9.580	-13.997	-18.198	-18.153	.000		
50.0	-16.575	-5.977	-10.269	-8.456	-12.473	-17.576	-17.527	.000		
75.0	-15.113	-3.190	-8.115	-6.339	-11.106	-16.983	-16.930	.000		
90.0	-8.715	-.948	-6.116	-3.905	-9.870	-14.693	-14.625	.000		
95.0	-7.252	-.414	-5.783	-1.259	-8.635	-13.703	-13.627	.000		
99.0	-6.082	.013	-5.533	.180	-7.647	-13.180	-13.101	.000		
NO. OF OBS	32	46	32	34	32	27	27	0		

TABLE 11b. ALTITUDE 1 TO 5 (KM)
NOV. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-4.394	-3.463	-4.818	-5.475	-5.048	-3.876	-4.220
5.0	-3.140	-2.662	-3.525	-3.495	-3.605	-2.939	-3.658
10.0	-2.767	-2.168	-2.910	-2.093	-2.579	-2.149	-2.254
25.0	-1.646	-0.915	-1.227	-0.378	-0.750	.124	.012
50.0	.222	.370	.769	1.396	1.691	2.894	1.053
75.0	2.303	1.726	2.754	3.583	3.659	5.186	2.608
90.0	3.571	2.803	5.265	5.831	5.155	7.581	3.358
95.0	3.994	3.453	8.009	6.984	7.318	8.112	3.621
99.0	4.332	4.235	11.356	8.136	8.381	8.865	4.010
NO. OF OBS	2167	1628	1432	1196	783	346	99
							0

ALTITUDE 1 TO 5 (KM)
NOV. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.841	-10.915	-12.885	-14.199	-14.550	-15.237	-7.288
5.0	-6.633	-8.231	-10.825	-10.721	-9.804	-13.799	-6.737
10.0	-5.537	-5.129	-8.057	-6.845	-7.294	-12.074	-6.252
25.0	-2.522	-3.648	-5.940	-4.225	-4.732	-7.987	-4.680
50.0	-.933	-.814	-3.668	-1.357	-.162	-4.844	-1.149
75.0	.290	1.342	-1.199	2.157	1.308	-2.259	-.502
90.0	2.314	3.654	2.345	3.870	2.345	1.546	-.061
95.0	3.530	4.710	4.507	4.649	3.278	2.069	.264
99.0	6.956	7.463	6.023	5.820	5.356	2.662	.985
NO. OF OBS	1203	812	598	688	549	172	63
							0

TABLE 11b (cont'd). ALTITUDE 1 TO 5 (KM)
NOV. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)				9.0	10.5	12.0
		3.0	4.5	6.0	7.5			
1.0	-11.880	-6.012	-7.713	-13.518	-15.753	-16.120	-11.944	.000
5.0	-6.712	-4.980	-5.771	-8.111	-12.962	-14.625	-10.378	.000
10.0	-3.279	-3.731	-4.138	-6.363	-9.153	-10.266	-8.514	.000
25.0	-1.431	-1.893	-.921	-2.627	-3.062	-2.751	-7.150	.000
50.0	-.154	-.571	.970	.345	2.243	2.798	1.417	.000
75.0	1.345	1.730	3.288	3.968	6.073	6.066	8.102	.000
90.0	3.512	4.118	5.874	5.845	8.047	8.754	9.820	.000
95.0	4.636	5.314	6.654	6.407	8.899	9.654	10.075	.000
99.0	5.776	7.327	7.246	7.616	10.212	11.725	10.279	.000
NO. OF OBS	449	648	365	425	249	162	103	0

ALTITUDE 1 TO 5 (KM)
NOV. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)				9.0	10.5	12.0
		3.0	4.5	6.0	7.5			
1.0	-1.868	-4.524	-.006	-.223	3.688	5.810	8.933	.000
5.0	-1.262	-2.941	.328	.294	4.591	6.337	9.227	.000
10.0	-.888	-.866	.745	2.227	6.298	6.796	9.413	.000
25.0	-.264	.758	3.108	5.605	7.901	8.964	10.103	.000
50.0	1.157	2.789	6.568	9.130	9.859	10.502	11.703	.000
75.0	2.945	6.426	9.916	11.922	12.317	13.134	12.651	.000
90.0	6.319	8.514	11.715	13.566	15.776	16.342	14.398	.000
95.0	7.982	9.522	13.264	14.239	16.602	17.411	14.931	.000
99.0	9.404	12.153	14.983	15.847	17.692	18.320	15.178	.000
NO. OF OBS	340	329	268	223	179	120	55	0

TABLE 11b (cont'd). ALTITUDE 1 TO 5 (KM)
NOV. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-3.067	-2.657	-1.292	-1.606	.000	.000	.000
5.0	-2.100	-2.077	-.702	-1.389	.000	.000	.000
10.0	-1.130	-.643	-.210	-1.117	.000	.000	.000
25.0	-.009	1.503	.696	.085	.000	.000	.000
50.0	1.472	2.971	3.495	1.713	.000	.000	.000
75.0	3.031	3.963	4.890	2.992	.000	.000	.000
90.0	4.156	6.346	6.136	4.853	.000	.000	.000
95.0	4.770	7.160	6.839	5.493	.000	.000	.000
99.0	6.740	8.902	7.288	5.819	.000	.000	.000
NO. OF OBS	128	92	57	28	0	0	0

ALTITUDE 1 TO 5 (KM)
NOV. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.308	-5.734	.000	.000	.000	.000	.000
5.0	-5.099	-5.669	.000	.000	.000	.000	.000
10.0	-4.838	-5.588	.000	.000	.000	.000	.000
25.0	-3.739	-5.344	.000	.000	.000	.000	.000
50.0	-2.632	-4.200	.000	.000	.000	.000	.000
75.0	-2.200	-3.425	.000	.000	.000	.000	.000
90.0	-1.280	-2.894	.000	.000	.000	.000	.000
95.0	-.822	-2.772	.000	.000	.000	.000	.000
99.0	-.404	-2.674	.000	.000	.000	.000	.000
NO. OF OBS	33	11	0	0	0	0	0

TABLE 11c. ALTITUDE 5 TO 10 (KM)
NOV. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-3.992	-3.144	-3.559	1.293	.350	.916	.000
5.0	-3.120	-2.746	-3.273	1.544	.552	1.769	.000
10.0	-2.752	-2.368	-2.916	2.018	.904	2.258	.000
25.0	-1.807	-1.414	-1.846	2.762	1.961	2.874	.000
50.0	-.483	1.145	1.867	3.299	3.320	3.653	.000
75.0	.396	3.034	5.744	3.646	4.370	4.509	.000
90.0	2.072	4.614	10.370	4.212	4.586	4.934	.000
95.0	2.663	5.121	10.905	4.686	4.658	5.072	.000
99.0	3.176	5.522	11.333	4.937	4.716	5.182	.000
NO. OF OBS	204	154	179	55	25	52	0

ALTITUDE 5 TO 10 (KM)
NOV. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.671	-7.383	-10.206	-11.450	-12.449	-13.427	-1.692
5.0	-4.490	-6.173	-8.483	-8.697	-9.827	-12.067	-1.542
10.0	-3.343	-5.054	-6.404	-6.490	-7.022	-8.090	-1.445
25.0	-1.102	-2.236	-2.614	-1.673	-1.610	.557	-1.078
50.0	.284	-.316	-.282	1.778	2.054	2.851	.250
75.0	2.175	2.090	2.926	3.860	5.914	4.805	.752
90.0	4.146	4.404	6.765	5.590	8.202	8.348	1.172
95.0	5.200	5.760	9.581	6.484	8.968	9.998	1.266
99.0	7.052	6.832	11.534	8.038	10.050	11.392	1.341
NO. OF OBS	1691	1378	1157	990	691	302	39

TABLE 11c (cont'd).

NOV. ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)				10.5	12.0
			4.5	6.0	7.5	9.0		
1.0	-7.673	-11.419	-12.861	-16.070	-15.473	-14.602	-2.325	.000
5.0	-6.486	-7.875	-10.440	-12.403	-13.428	-14.168	-2.185	.000
10.0	-4.467	-4.729	-8.113	-9.176	-9.334	-13.080	-2.056	.000
25.0	-1.588	-2.841	-4.760	-3.682	-3.290	-6.634	-1.793	.000
50.0	-.393	-1.582	-2.538	-.765	.479	-4.084	-1.334	.000
75.0	.784	.034	-.785	2.452	3.018	-.380	-.761	.000
90.0	1.820	1.622	.910	4.320	6.249	2.295	-.033	.000
95.0	2.341	2.884	2.457	5.438	7.522	3.172	.320	.000
99.0	3.947	6.159	6.030	7.471	9.419	4.117	.880	.000
NO. OF OBS	1559	1007	841	817	663	191	58	0

NOV. ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)				10.5	12.0
			4.5	6.0	7.5	9.0		
1.0	-12.369	-8.563	-4.993	-9.572	-2.452	-5.523	-3.950	.000
5.0	-9.761	-6.720	-4.284	-7.849	-2.099	-4.895	-3.630	.000
10.0	-7.092	-4.787	-3.397	-7.053	-1.659	-4.111	-3.231	.000
25.0	-2.028	-2.178	-2.133	-1.985	-.337	-1.767	-2.032	.000
50.0	-.517	-.285	-1.061	1.876	1.790	2.167	-.074	.000
75.0	.771	2.916	.010	6.997	3.835	7.372	1.836	.000
90.0	2.294	7.187	7.221	11.043	13.762	11.187	9.322	.000
95.0	3.609	8.848	11.291	13.953	15.671	12.458	10.356	.000
99.0	7.189	10.283	17.504	16.683	17.118	13.476	11.183	.000
NO. OF OBS	329	623	253	515	206	76	114	0

TABLE 11c (cont'd). ALTITUDE 5 TO 10 (KM)
NOV. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)					
	1.5	3.0	4.5	6.0	7.5	9.0
1.0	-5.423	-6.079	-4.777	-3.020	-2.838	-3.388
5.0	-4.151	-3.466	-1.409	-1.184	-1.258	-1.368
10.0	-3.408	-2.223	-.386	-.365	-.585	.071
25.0	-1.108	.404	1.219	1.651	1.440	1.591
50.0	.953	3.739	6.000	4.890	5.522	4.327
75.0	3.666	7.416	8.992	9.940	8.609	6.839
90.0	7.643	10.373	12.167	12.201	10.821	8.016
95.0	9.011	11.508	13.071	14.911	11.569	9.333
99.0	10.903	12.997	15.183	16.194	15.002	10.948
NO. OF OBS	575	562	449	405	293	142
						46
						0

ALTITUDE 5 TO 10 (KM)
NOV. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)					
	1.5	3.0	4.5	6.0	7.5	9.0
1.0	-13.670	-17.013	-18.304	-15.270	-14.195	-14.437
5.0	-9.453	-12.908	-15.558	-14.266	-11.109	-12.475
10.0	-8.017	-10.964	-12.808	-11.470	-8.148	-9.435
25.0	-5.370	-8.327	-7.499	-4.091	-1.652	-3.059
50.0	-3.132	-5.615	-3.304	-1.699	1.168	-.362
75.0	-.851	-1.152	-.245	1.512	4.273	2.228
90.0	2.640	3.926	3.774	3.858	6.274	4.266
95.0	3.965	4.718	5.181	5.515	7.414	5.209
99.0	7.242	6.255	6.897	7.206	8.623	6.298
NO. OF OBS	620	454	299	212	161	126
						83
						0

TABLE 11c (cont'd). ALTITUDE 5 TO 10 (KM)
 NOV. INITIAL WIND SPEED 60 TO 70 M/SEC
 WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)					9.0	10.5	12.0
			4.5	6.0	7.5	9.0	10.5			
1.0	-10.004	-17.621	-22.147	-23.207	-25.063	-25.318	-22.781			.000
5.0	-6.926	-16.555	-19.392	-22.794	-23.934	-25.068	-22.178			.000
10.0	-5.064	-12.879	-18.133	-21.310	-22.233	-24.756	-21.830			.000
25.0	-3.302	-8.263	-15.251	-18.192	-19.574	-22.603	-20.504			.000
50.0	-1.567	-3.892	-9.384	-15.091	-17.467	-17.013	-19.788			.000
75.0	-.169	-1.821	-5.489	-10.149	-12.866	-13.462	-18.813			.000
90.0	2.048	.053	.043	-4.483	-10.580	-7.971	-14.810			.000
95.0	3.018	1.236	1.083	-2.799	-7.250	-6.301	-14.358			.000
99.0	5.243	4.631	2.954	1.419	-2.787	-5.364	-14.024			.000
NO. OF OBS	222	222	222	206	161	111	60			0

TABLE 11d. ALTITUDE 10 TO 15 (KM)
NOV. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-2.932	-13.092	-3.768	-3.758	-2.300	-2.808	.000	.000		
5.0	-2.540	-10.541	-3.438	-3.669	-1.819	-1.321	.000	.000		
10.0	-2.101	-7.616	-3.025	-3.558	-1.217	.539	.000	.000		
25.0	-1.419	-2.041	-1.789	-3.143	.587	3.407	.000	.000		
50.0	-.430	2.181	1.408	-2.015	1.537	5.178	.000	.000		
75.0	2.985	5.360	5.821	-1.083	2.339	6.949	.000	.000		
90.0	5.639	7.154	7.116	-.472	4.638	8.012	.000	.000		
95.0	6.568	7.752	7.548	-.361	5.119	8.366	.000	.000		
99.0	7.833	8.230	7.894	-.272	5.504	8.649	.000	.000		
NO. OF OBS	144	104	46	17	30	25	0	0		

TABLE 11d (cont'd). ALTITUDE 10 TO 15 (KM)
NOV. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-12.671	-19.558	-18.991	-12.043	-15.335	-13.466	.000
5.0	-9.267	-15.430	-15.418	-8.366	-12.279	-11.894	.000
10.0	-3.083	-14.008	-13.824	-6.176	-9.849	-7.987	.000
25.0	-1.685	-3.206	-4.988	-3.953	-4.462	-5.271	.000
50.0	-.478	-1.520	-2.480	-2.429	-3.013	-4.037	.000
75.0	.716	.201	-.830	-.936	-1.763	-3.181	.000
90.0	2.178	2.934	.936	2.055	1.527	-1.674	.000
95.0	3.145	5.738	1.910	3.816	4.926	-4.59	.000
99.0	6.184	15.701	7.732	7.455	8.538	6.384	.000
NO. OF OBS	1958	1492	1294	905	620	239	0

ALTITUDE 10 TO 15 (KM)
NOV. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-22.562	-7.758	-16.533	-19.394	-24.018	-16.857	.000
5.0	-20.195	-5.827	-14.871	-17.764	-20.585	-15.918	.000
10.0	-18.003	-3.253	-13.139	-16.270	-17.046	-15.225	.000
25.0	-4.357	-1.074	-4.406	-6.086	-13.002	-14.016	.000
50.0	.204	2.339	.897	-.431	-2.685	-10.933	.000
75.0	2.522	6.320	5.436	4.683	4.202	.624	.000
90.0	5.872	10.902	7.909	8.908	6.317	3.926	.000
95.0	8.922	12.242	8.706	11.309	7.462	4.648	.000
99.0	12.206	17.047	9.901	14.730	9.278	5.262	.000
NO. OF OBS	1235	880	581	817	555	189	57

TABLE 11d (cont'd). ALTITUDE 10 TO 15 (KM)
NOV. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-26.669	-24.259	-22.087	-22.194	-24.157	-24.662	-25.332
5.0	-24.864	-10.831	-18.980	-20.291	-21.024	-22.668	-21.619
10.0	-22.608	-9.054	-17.269	-17.713	-17.108	-20.176	-16.977
25.0	-4.158	-3.723	-4.170	-3.093	-8.296	-3.987	-9.009
50.0	-0.384	-0.201	.005	-0.081	-3.401	-0.518	-4.276
75.0	2.535	3.036	2.661	2.873	1.495	2.951	.457
90.0	4.286	6.982	5.476	5.079	4.432	5.032	3.297
95.0	13.645	11.754	7.336	5.872	5.411	5.726	4.243
99.0	19.305	18.610	11.870	6.507	6.194	6.281	5.001
NO. OF OBS	1047	1070	799	877	540	232	183
							0

ALTITUDE 10 TO 15 (KM)
NOV. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-31.579	-33.144	-23.286	-26.826	-29.871	-29.909	-29.157
5.0	-29.257	-30.418	-21.828	-25.568	-26.313	-28.624	-29.027
10.0	-24.794	-25.201	-20.006	-23.995	-23.115	-27.019	-28.865
25.0	-5.481	-7.432	-9.579	-19.278	-13.523	-22.202	-28.370
50.0	-1.752	-2.756	-3.734	-4.449	-3.832	-1.933	-27.744
75.0	.901	4.627	5.579	5.215	3.574	4.218	-25.962
90.0	8.453	10.599	8.926	9.736	8.018	7.909	-25.362
95.0	11.863	13.118	11.956	11.243	9.499	9.140	-25.004
99.0	13.997	15.160	15.079	12.449	10.684	10.124	-24.380
NO. OF OBS	465	402	332	272	199	140	77
							0

TABLE 11d (cont'd). ALTITUDE 10 TO 15 (KM)
NOV. INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-37.518	-38.674	-24.639	-27.347	-31.505	-30.892	-29.888	.000		
5.0	-34.029	-35.691	-21.557	-24.855	-38.484	-29.579	-29.442	.000		
10.0	-29.668	-32.531	-17.703	-21.739	-29.207	-27.939	-29.157	.000		
25.0	-5.371	-11.817	-7.419	-12.393	-25.379	-23.017	-28.547	.000		
50.0	-1.814	-3.282	-3.247	-3.143	-4.389	-14.814	-27.711	.000		
75.0	1.743	-1.160	1.490	1.218	1.375	-5.813	-26.771	.000		
90.0	3.877	2.808	4.484	3.835	4.228	-3.357	-23.480	.000		
95.0	4.589	4.939	5.482	4.798	5.179	1.461	-21.623	.000		
99.0	5.159	6.644	6.280	5.406	5.940	2.916	-20.869	.000		
NO. OF OBS	551	462	348	312	256	175	83	0		

TABLE 11e. ALTITUDE 15 TO 20 (KM)
NOV. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.922	-5.443	-5.225	-4.350	-4.453	-4.671	-4.732	.000		
5.0	-2.160	-3.581	-2.691	-3.167	-3.133	-4.061	-4.324	.000		
10.0	-1.667	-2.044	-2.025	-1.880	-2.405	-3.434	-3.738	.000		
25.0	-.723	-.792	-1.179	-.788	-1.255	-1.564	-2.349	.000		
50.0	-.109	-.042	-.381	-.169	-.219	-.691	-1.560	.000		
75.0	.481	.625	.239	.224	.205	-.180	-.780	.000		
90.0	1.565	1.720	.927	1.111	1.078	.518	-.278	.000		
95.0	2.484	2.458	1.298	2.136	1.812	.934	-.130	.000		
99.0	5.511	4.819	2.621	3.622	8.203	1.271	-.026	.000		
NO. OF OBS	2162	1534	1257	1151	892	325	117	0		

ALTITUDE 15 TO 20 (KM)
NOV. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-9.237	-10.809	-12.885	-9.414	-9.490	-9.693	-9.494	.000		
5.0	-7.162	-6.761	-7.349	-7.675	-8.401	-8.782	-9.028	.000		
10.0	-5.296	-3.840	-5.720	-6.508	-7.201	-8.041	-8.423	.000		
25.0	-1.871	-2.145	-3.171	-3.081	-4.149	-6.334	-6.502	.000		
50.0	-.635	-.388	-1.008	-1.076	-.751	-2.123	-2.833	.000		
75.0	1.058	2.134	1.649	1.237	1.248	-.795	4.216	.000		
90.0	3.162	4.234	3.562	3.869	2.981	2.163	5.992	.000		
95.0	4.735	6.294	4.855	5.494	4.009	2.668	7.235	.000		
99.0	6.673	9.792	7.534	9.118	7.672	3.582	7.967	.000		
NO. OF OBS	1955	1473	1180	1108	778	361	137	0		

TABLE 11e (cont'd). ALTITUDE 15 TO 20 (KM)
NOV. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	12.0
1.0	-15.550	-15.451	-14.730	-15.448	-14.640	-15.644	-14.228
5.0	-12.352	-12.218	-11.375	-13.248	-13.320	-14.538	-13.461
10.0	-9.470	-5.211	-9.801	-11.587	-12.061	-13.632	-12.502
25.0	-2.276	-2.498	-4.353	-4.026	-9.834	-11.224	-9.625
50.0	-0.335	.240	-1.051	-.997	1.638	-1.650	-4.830
75.0	1.393	4.668	2.934	2.592	3.324	3.260	.863
90.0	6.697	8.074	5.194	5.100	4.318	4.046	4.425
95.0	8.112	9.427	5.867	11.243	5.273	4.398	5.613
99.0	9.458	11.021	9.342	13.000	7.424	4.518	6.563
NO. OF OBS	786	746	626	567	342	178	94
							0

ALTITUDE 15 TO 20 (KM)
NOV. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	12.0
1.0	-24.942	-20.956	-23.227	-21.041	-20.586	-19.930	-18.257
5.0	-22.548	-18.178	-18.970	-19.326	-19.490	-19.251	-17.724
10.0	-19.556	-8.569	-13.409	-17.182	-18.121	-18.403	-17.059
25.0	-6.241	-4.336	-5.359	-8.610	-14.013	-15.857	-15.061
50.0	-2.884	-.912	-.469	-.541	.922	-10.975	-11.733
75.0	.472	2.424	3.929	4.032	4.971	.585	-8.404
90.0	5.268	5.819	5.938	6.077	7.400	3.336	-2.731
95.0	7.919	7.626	6.794	6.758	8.210	4.253	.449
99.0	10.040	9.907	7.479	7.304	8.858	4.987	2.994
NO. OF OBS	464	603	336	356	187	135	52
							0

TABLE 12a. ALTITUDE .2 TO 1 (KM)
DEC. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.412	-3.387	-3.373	-3.791	-3.660	-3.643	-4.720
5.0	-3.461	-2.460	-2.544	-2.898	-2.723	-3.113	-4.235
10.0	-2.254	-1.699	-1.773	-2.119	-2.155	-2.481	-3.801
25.0	-1.777	-1.548	-1.742	-1.695	-1.641	-1.585	-1.413
50.0	.151	.259	.421	.046	.755	.817	-.075
75.0	1.178	1.131	1.938	1.328	2.916	2.385	2.553
90.0	2.289	2.036	2.897	2.668	4.124	3.607	3.257
95.0	3.593	2.740	3.739	3.549	4.466	4.073	3.745
99.0	6.022	3.800	5.165	4.634	4.901	5.613	5.200
NO. OF OBS	714	607	418	379	287	188	96
							47

TABLE 12b. ALTITUDE 0 TO 1 (KM)
DEC. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.740	-10.244	-5.166	-5.523	.000	-7.304	-7.676
5.0	-5.254	-8.886	-5.030	-5.335	.000	-7.199	-7.462
10.0	-4.799	-7.361	-4.859	-5.100	.000	-7.068	-7.194
25.0	-1.756	-3.375	-3.185	-3.220	.000	-6.674	-6.423
50.0	-.572	-1.028	-1.635	-1.022	.000	-5.657	-5.893
75.0	.149	-.088	-.132	.039	.000	-4.339	-5.248
90.0	.719	.512	.175	.630	.000	-3.798	-5.069
95.0	.869	.689	.278	.865	.000	-3.634	-5.010
99.0	1.649	1.713	.360	1.053	.000	-3.503	-4.962
NO. OF OBS	106	90	33	31	0	17	27
							35

TABLE 12b. ALTITUDE 1 TO 5 (KM)
DEC. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-4.625	-5.729	-5.701	-5.766	-5.076	-6.302	-4.401
5.0	-2.185	-2.921	-3.372	-3.553	-3.494	-4.394	-3.675
10.0	-1.502	-2.196	-2.765	-2.639	-2.770	-3.414	-3.375
25.0	-0.862	-1.304	-1.630	-1.711	-1.772	-2.442	-2.578
50.0	-0.238	-0.409	-0.522	-0.746	-0.392	-1.036	-1.044
75.0	0.566	0.679	0.969	0.642	1.899	0.857	0.709
90.0	1.679	1.688	2.184	2.256	3.779	3.028	2.691
95.0	2.861	2.091	2.882	3.297	4.355	3.746	3.449
99.0	5.403	2.765	4.081	4.377	4.922	4.864	4.427
NO. OF OBS	2280	2015	1550	1355	998	633	320
							160

ALTITUDE 1 TO 5 (KM)
DEC. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-3.390	-4.252	-5.646	-6.500	-4.321	-8.120	-8.239
5.0	-2.930	-3.643	-4.196	-5.320	-5.904	-7.640	-7.689
10.0	-2.442	-3.082	-3.797	-4.795	-5.111	-7.091	-7.262
25.0	-1.435	-2.124	-2.977	-3.744	-2.842	-6.336	-6.256
50.0	-0.496	-0.769	-1.476	-1.777	-1.180	-3.572	-3.062
75.0	0.571	0.313	-0.240	0.161	-0.022	1.492	2.807
90.0	1.452	1.502	0.919	1.967	1.412	3.277	4.176
95.0	1.796	1.985	2.243	2.909	1.858	5.264	5.221
99.0	2.894	3.727	2.755	3.295	2.311	5.900	6.025
NO. OF OBS	102	570	145	177	115	153	145
							150

TABLE 12b (cont'd). ALTITUDE 1 TO 5 (KM)
OCC. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.174	-5.147	-7.076	-9.111	-9.966	-9.501	-1.561	-1.302		
5.0	-2.581	-4.977	-6.978	-8.876	-9.909	-9.465	-1.444	-1.269		
10.0	-2.267	-4.757	-6.856	-8.582	-9.839	-9.420	-1.298	-1.228		
25.0	-1.961	-3.917	-6.490	-7.700	-9.627	-9.284	-1.897	-1.105		
50.0	-1.344	-1.437	-5.758	-6.215	-9.425	-9.058	-1.350	-1.345		
75.0	.329	-1.031	-3.544	-4.692	-9.248	-9.337	.233	.550		
90.0	1.212	1.020	-2.316	-1.576	-9.111	1.117	1.035	.673		
95.0	1.540	1.825	-1.135	-1.358	-9.041	1.434	1.473	.836		
99.0	2.329	3.236	.597	.616	.016	1.687	1.823	.967		
NO. OF OBS	113	135	65	68	7	14	15	10		

TABLE 12c. ALTITUDE 5 TO 10 (KM)
DEC. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)					10.5	12.0
		3.0	4.5	6.0	7.5	9.0		
1.0	-3.044	-4.061	-4.343	-3.795	-2.443	-3.281	-0.739	.204
5.0	-2.330	-2.766	-2.617	-1.810	-1.505	-1.170	.000	.610
10.0	-1.516	-1.800	-1.826	-1.065	-.657	-.268	1.279	1.017
25.0	-.734	-.475	-.175	.481	.875	1.392	2.682	3.001
50.0	.438	.915	1.503	2.049	3.127	3.165	4.454	4.454
75.0	1.344	1.870	2.972	4.115	4.820	5.334	6.492	6.191
90.0	2.274	3.371	4.639	5.745	5.987	6.593	7.259	8.239
95.0	3.447	5.330	6.757	6.551	6.646	7.437	8.185	8.663
99.0	9.648	9.374	8.346	7.902	7.871	8.484	9.744	8.989
NO. OF OBS	1439	1400	1150	917	638	505	264	134

ALTITUDE 5 TO 10 (KM)
DEC. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	Time Differences (Hours)					10.5	12.0
		3.0	4.5	6.0	7.5	9.0		
1.0	-8.685	-7.858	-7.891	-6.761	-5.619	-7.464	-1.067	.356
5.0	-4.560	-5.876	-5.271	-4.603	-4.161	-6.275	-.589	.618
10.0	-3.008	-3.563	-4.285	-3.489	-3.167	-4.210	-.068	.897
25.0	-1.364	-1.755	-2.011	-.169	-1.439	-.973	.900	1.436
50.0	-.192	.448	1.032	.180	.505	1.759	2.474	2.178
75.0	.891	1.698	2.961	3.178	3.613	4.214	4.359	3.639
90.0	1.781	2.906	3.980	4.607	5.107	6.057	5.510	5.434
95.0	2.150	3.773	4.722	5.411	5.560	6.595	6.906	5.852
99.0	6.471	5.994	6.981	6.193	6.333	7.101	7.181	6.363
NO. OF OBS	1198	821	650	683	562	295	136	69

PERCENT LEVELS	Time Differences (Hours)								NO. OF OBS
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	
1.0	-14.947	-13.864	-3.716	-15.107	-4.380	-5.304	-5.349	-6.077	
5.0	-11.443	-12.382	-2.878	-13.707	-3.482	-4.919	-4.794	-5.784	
10.0	-8.622	-8.942	-2.395	-12.481	-2.804	-4.559	-4.277	-4.266	
25.0	-1.797	-2.046	-1.439	-6.826	-2.216	-2.363	-2.121	.434	
50.0	-.725	-.248	-.736	-1.336	-.794	.135	.351	1.555	
75.0	.578	1.061	.145	.506	.107	2.362	.988	2.026	
90.0	1.829	2.325	1.135	1.405	.540	3.179	1.628	2.926	
95.0	2.681	3.713	1.692	1.797	.879	3.480	1.847	3.162	
99.0	4.307	6.979	2.184	2.377	1.680	3.720	2.281	3.640	
	848	760	264	261	155	89	101	112	

PERCENT LEVELS	ALTIMETER 5 TO 10 (KM)									
	INITIAL WIND SPEED 30 TO 40 M/SEC									
	WIND SPEED CHANGE VALUES(M/SEC)									
	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-14.586	-20.278	-4.545	-19.957	-4.609	-8.026	-6.920	-7.594		
5.0	-14.890	-19.368	-4.261	-19.547	-4.484	-7.249	-6.802	-7.491		
10.0	-13.521	-17.355	-4.048	-19.034	-4.276	-6.624	-6.653	-7.361		
25.0	-3.010	-6.459	-3.105	-17.495	-3.722	-4.223	-6.150	-6.995		
50.0	-1.647	-1.168	-1.031	-14.931	-2.933	-3.061	-2.534	-5.885		
75.0	1.717	1.406	1.159	-4.933	-2.530	-2.094	-1.801	-3.045		
90.0	3.135	2.950	2.375	-1.787	-2.180	-1.371	1.016	-1.498		
95.0	3.607	3.465	2.527	-1.739	-2.024	1.145	1.313	1.301		
99.0	3.985	3.877	2.795	1.100	-1.824	1.493	1.551	1.677		
NO. OF OBS	515	419	136	139	45	111	99	85		

TABLE 12d. ALTITUDE 10 TO 15 (KM)
DEC. INITIAL WIND SPEED 1 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences(Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-2.085	-2.500	-.664	-1.157	-.100	-1.040	.000
5.0	-1.027	-.919	.483	.452	.259	-.203	.000
10.0	-.325	.328	.985	1.305	1.031	.397	.000
25.0	.815	1.713	2.419	3.357	2.515	1.832	.000
50.0	4.352	5.164	6.570	10.576	4.541	2.856	.000
75.0	14.887	13.951	14.025	13.518	8.627	5.922	.000
90.0	17.814	17.548	17.369	20.832	14.635	6.924	.000
95.0	20.726	19.337	21.169	22.163	15.834	7.260	.000
99.0	21.961	23.267	26.280	25.273	17.142	7.500	.000
NO. OF OBS	596	604	533	349	200	86	0

ALTITUDE 10 TO 15 (KM)
DEC. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-12.291	-13.310	-13.911	-13.082	-7.907	-8.810	-1.740
5.0	-8.887	-10.103	-12.233	-12.022	-1.258	-3.822	-.987
10.0	-6.333	-6.857	-10.967	-11.151	-.763	-1.525	-.301
25.0	-.834	-1.887	-3.849	-8.183	.949	.439	1.291
50.0	.525	1.221	1.229	.209	3.160	2.145	2.394
75.0	2.438	3.892	3.979	2.647	4.671	3.952	4.047
90.0	13.268	15.265	5.629	4.365	7.843	7.562	9.207
95.0	16.443	18.720	7.598	5.192	10.645	10.361	13.487
99.0	21.641	21.963	10.200	7.195	11.644	13.064	16.801
NO. OF OBS	1105	982	698	722	517	522	334
							303

TABLE 12d (cont'd) ALTITUDE 10 TO 15 (KM)
DEC. INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-20.354	-19.975	-22.707	-18.760	-7.375	-4.051	-2.677
5.0	-19.234	-18.136	-19.676	-16.239	-4.870	-3.312	-2.546
10.0	-16.619	-13.993	-8.662	-13.306	-4.208	-2.859	-2.323
25.0	-3.450	-3.853	-3.889	-3.441	-2.929	-1.213	-0.776
50.0	-1.121	-1.235	-1.196	-0.897	-0.920	0.260	0.695
75.0	1.111	1.148	1.325	1.516	1.521	1.900	1.697
90.0	4.632	6.033	3.610	3.698	3.736	3.499	2.030
95.0	13.036	13.966	4.755	5.246	5.021	4.923	2.516
99.0	15.230	17.504	5.671	6.881	7.004	5.611	3.044
NO. OF OBS	1122	981	668	456	350	192	66
							97

ALTITUDE 10 TO 15 (KM)
DEC. INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-23.623	-26.871	-21.906	-31.053	-24.372	-5.620	-6.191
5.0	-25.649	-25.753	-19.466	-29.625	-21.756	-5.101	-5.530
10.0	-24.375	-24.356	-18.890	-27.840	-20.701	-4.749	-4.438
25.0	-14.610	-5.365	-17.303	-22.913	-16.000	-3.974	-3.482
50.0	-1.714	-3.159	-6.404	-5.704	-11.667	-2.309	0.591
75.0	0.859	-0.768	-0.348	-2.837	-5.267	1.243	4.231
90.0	2.613	1.571	0.786	-1.117	-2.837	7.098	8.310
95.0	3.657	2.350	1.859	-0.543	-2.135	8.295	9.585
99.0	5.027	2.974	3.099	-0.085	-1.269	10.151	10.678
NO. OF OBS	786	620	301	352	212	200	200
							0

TABLE 12d (cont'd). ALTITUDE 10 TO 15 (KM)
DEC. INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	1.5	3.0	Time Differences (Hours)					9.0	10.5	12.0
			4.5	6.0	7.5					
1.0	-18.609	-8.412	.000	-11.409	-28.304			.000	.000	.000
5.0	-14.719	-7.901	.000	-11.005	-27.081			.000	.000	.000
10.0	-12.128	-7.356	.000	-10.501	-26.227			.000	.000	.000
25.0	-4.223	-5.179	.000	-8.433	-24.631			.000	.000	.000
50.0	-1.490	-2.978	.000	-1.612	-17.038			.000	.000	.000
75.0	.347	-.326	.000	-.806	-7.207			.000	.000	.000
90.0	1.817	2.116	.000	-.322	-4.202			.000	.000	.000
95.0	2.845	4.019	.000	-.161	-3.261			.000	.000	.000
99.0	5.398	7.077	.000	-.032	-2.508			.000	.000	.000
NO. OF OBS	279	151	0	121	121			0	0	0

ALTITUDE 10 TO 15 (KM)
DEC. INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	1.5	3.0	4.5	Time Differences (Hours)					9.0	10.5	12.0
				6.0	7.5						
1.0	-4.202	-6.209	.000	.000	.000			.000	.000	.000	.000
5.0	-4.052	-5.924	.000	.000	.000			.000	.000	.000	.000
10.0	-3.863	-5.569	.000	.000	.000			.000	.000	.000	.000
25.0	-3.203	-4.502	.000	.000	.000			.000	.000	.000	.000
50.0	-.016	-1.997	.000	.000	.000			.000	.000	.000	.000
75.0	1.408	3.804	.000	.000	.000			.000	.000	.000	.000
90.0	3.345	5.463	.000	.000	.000			.000	.000	.000	.000
95.0	5.604	6.017	.000	.000	.000			.000	.000	.000	.000
99.0	6.121	6.459	.000	.000	.000			.000	.000	.000	.000
NO. OF OBS	112	62	0	0	0			0	0	0	0

TABLE 12e. ALTITUDE 15 TO 20 (KM)
DEC. INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-7.732	-7.150	-7.258	-6.907	-5.956	-1.335	-1.367	.148		
5.0	-5.405	-3.668	-3.593	-5.732	-2.131	-.957	-1.117	.739		
10.0	-3.020	-1.466	-1.775	-4.300	-1.146	-.714	-.804	1.561		
25.0	-.488	-.391	-.211	-1.128	-.427	-.219	.062	3.977		
50.0	.957	1.191	3.302	-.150	1.591	.586	1.576	7.810		
75.0	8.727	8.632	10.259	1.225	9.081	5.908	6.695	12.773		
90.0	14.970	16.618	15.122	14.346	13.224	11.420	9.594	19.836		
95.0	19.011	20.431	19.234	18.836	15.224	13.389	11.159	22.178		
99.0	22.341	25.154	25.588	24.608	17.799	14.733	12.182	24.101		
NO. OF OBS	1657	1443	1053	818	632	379	250	297		

ALTITUDE 15 TO 20 (KM)
DEC. INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-16.826	-16.597	-16.481	-14.996	-13.016	-5.086	-3.368	9.788		
5.0	-14.052	-13.465	-14.344	-11.737	-10.999	-4.631	-2.919	10.260		
10.0	-12.160	-9.404	-12.243	-8.996	-8.477	-4.061	-2.359	10.850		
25.0	-7.381	-4.512	-3.757	-2.656	-2.967	-2.353	-.677	12.621		
50.0	-.399	-.402	-.461	-.197	-1.201	.502	2.486	18.150		
75.0	2.649	2.553	.762	.928	2.124	3.370	10.964	29.666		
90.0	7.586	8.887	9.290	1.861	13.119	13.680	14.989	32.803		
95.0	14.794	16.720	12.210	3.116	14.439	15.695	16.165	33.841		
99.0	27.731	28.676	15.320	4.819	15.496	17.307	17.105	34.672		
NO. OF OBS	1168	1057	619	636	341	343	175	103		

TABLE 12e (cont'd). ALTITUDE 15 TO 20 (NM)
 DFC. INITIAL WIND SPEED 20 TO 30 M/SEC
 WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)					NO. OF OBS
	1.5	3.0	4.5	6.0	7.5	
1.0	-73.036	-23.724	-22.953	-23.598	-20.003	9.0
5.0	-21.330	-22.021	-22.205	-20.389	-18.253	10.4
10.0	-20.047	-19.891	-21.271	-15.024	-16.066	12.0
25.0	-15.647	-4.020	-15.403	-4.194	-5.713	5.816
50.0	-1.354	-1.007	-1.582	-1.234	-2.323	1.599
75.0	.892	1.712	.769	2.212	2.017	2.384
90.0	2.667	4.537	3.870	5.373	4.860	3.110
95.0	4.004	5.478	5.971	6.426	5.815	3.485
99.0	5.136	6.232	8.196	7.269	6.579	3.785
	741	513	411	340	299	118
					215	0

ALTITUDE 15 TO 20 (KM)
 DFC. INITIAL WIND SPEED 30 TO 40 M/SEC
 WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)					NO. OF OBS
	1.5	3.0	4.5	6.0	7.5	
1.0	-31.680	-30.814	-26.289	-28.733	-27.087	9.0
5.0	-27.720	-25.151	-25.403	-25.764	-25.595	10.4
10.0	-20.250	-18.073	-24.296	-22.097	-23.730	12.0
25.0	-10.106	-10.574	-20.975	-12.889	-16.135	5.816
50.0	-2.232	-5.049	-15.441	-7.830	-11.016	1.599
75.0	1.290	.475	-9.906	-2.770	-5.708	2.384
90.0	3.413	3.790	.122	.266	-2.523	3.110
95.0	5.120	4.895	3.601	1.273	-1.462	3.485
99.0	6.689	5.779	6.384	2.089	-0.612	3.785
	579	237	116	130	102	44
					41	0

TABLE 12e (cont'd). ALTITUDE 15 TO 20 (KM)
 DFC. INITIAL WIND SPEED 40 TO 50 M/SEC
 WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-3.206	-6.546	.000	-8.409	-29.524	2.284	3.992	.000		
5.0	-2.720	-6.137	.000	-8.047	-29.421	2.419	4.118	.000		
10.0	-2.453	-5.525	.000	-7.734	-29.291	2.588	4.240	.000		
25.0	-1.769	-4.585	.000	-7.194	-28.986	3.247	4.507	.000		
50.0	-.895	-3.074	.000	-6.585	-28.715	4.092	4.994	.000		
75.0	.512	-1.372	.000	-5.860	-28.307	4.782	5.511	.000		
90.0	2.223	-.011	.000	-5.297	-27.932	5.565	5.834	.000		
95.0	2.908	.397	.000	-5.070	-27.846	5.902	5.992	.000		
99.0	3.683	.806	.000	-4.761	-27.777	6.172	6.118	.000		
NO. OF OBS	60	50	1	26	26	22	13	0		

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TABLE 13a. ALTITUDE .2 TO 1 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-7.771	-6.595	-6.641	-6.831	-6.822	-6.480	12.0
5.0	-4.697	-4.082	-4.595	-4.847	-4.967	-4.612	-6.796
10.0	-2.579	-2.681	-3.117	-3.590	-3.708	-3.568	-5.239
25.0	-0.927	-1.100	-1.240	-1.453	-1.903	-1.288	-4.109
50.0	.130	.130	.279	.135	.175	.338	-1.810
75.0	1.337	1.460	2.055	2.273	2.172	2.331	.425
90.0	3.155	3.503	3.943	4.431	4.635	4.716	3.523
95.0	5.194	6.024	5.618	5.793	6.052	6.098	6.071
99.0	8.541	9.974	10.472	8.820	9.879	8.963	8.040
NO. OF OBS	11715	10337	7636	6442	4717	2687	11.375
							17.305
							2029
							1008

ALTITUDE .2 TO 1 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-11.892	-11.440	-12.244	-11.546	-10.826	-15.086	-12.0
5.0	-8.900	-9.112	-9.637	-10.282	-9.445	-10.870	-11.484
10.0	-6.484	-7.525	-7.109	-9.250	-8.703	-9.764	-10.782
25.0	-3.875	-4.328	-4.812	-6.053	-6.471	-6.924	-9.889
50.0	-1.338	-1.951	-2.264	-2.859	-4.187	-3.799	-7.221
75.0	.388	.079	.265	-.190	-1.531	-7.66	-5.790
90.0	2.174	1.948	2.014	1.986	.516	3.628	-3.287
95.0	3.569	4.629	4.581	3.880	2.924	4.845	-1.672
99.0	5.093	6.503	10.009	10.774	4.967	7.572	-.600
NO. OF OBS	1316	1340	1024	986	581	402	.723
							4.952
							199
							181

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TABLE 13a (cont'd). ALTITUDE .2 TO 1 (KM)
INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-19.337	-12.949	-13.079	-12.016	-15.075	-18.824	-18.784	.000		
5.0	-18.687	-12.345	-12.953	-11.440	-14.875	-18.720	-18.679	.000		
10.0	-17.873	-11.918	-12.797	-10.721	-14.671	-18.589	-18.547	.000		
25.0	-15.433	-10.115	-11.935	-9.580	-13.997	-18.198	-18.153	.000		
50.0	-5.561	-5.716	-10.269	-8.456	-12.473	-17.576	-17.527	.000		
75.0	1.395	-2.958	-8.115	-6.339	-11.106	-16.983	-16.930	.000		
90.0	2.568	-1.018	-6.116	-3.905	-9.870	-14.693	-14.625	.000		
95.0	2.959	-2.449	-5.783	-1.259	-8.635	-13.703	-13.627	.000		
99.0	3.272	.006	-5.533	.180	-7.647	-13.180	-13.101	.000		
NO. OF OBS	89	49	32	34	32	27	27	0		

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TABLE 13b.

ALTITUDE 1 TO 5 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-4.968	-4.541	-5.153	-5.410	-5.476	-5.917	-5.574	-6.645		
5.0	-2.577	-2.878	-3.160	-3.663	-3.771	-3.918	-3.934	-4.276		
10.0	-1.752	-2.157	-2.351	-2.653	-2.824	-3.110	-3.169	-3.248		
25.0	-0.817	-1.033	-1.097	-1.279	-1.288	-1.392	-1.389	-1.980		
50.0	.134	.231	.411	.301	.578	.709	.819	1.333		
75.0	1.134	1.547	2.028	2.188	2.768	2.912	3.302	3.643		
90.0	2.368	2.916	3.840	4.077	4.835	4.937	5.481	5.872		
95.0	3.398	4.028	5.211	5.545	6.341	6.311	6.865	6.759		
99.0	6.429	8.191	10.996	9.807	11.495	8.850	14.615	16.099		
NO. OF OBS	33384	30215	23396	18981	14258	7633	5833	3025		

ALTITUDE 1 TO 5 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-7.846	-8.452	-8.197	-8.823	-9.475	-10.148	-9.178	-8.272		
5.0	-4.847	-4.685	-5.979	-6.382	-7.072	-7.297	-6.842	-7.235		
10.0	-3.398	-3.548	-4.619	-4.989	-5.721	-5.913	-5.743	-5.969		
25.0	-1.722	-1.977	-2.589	-2.818	-3.233	-3.195	-3.608	-3.787		
50.0	-0.414	-0.318	-0.582	-0.282	-0.575	-0.805	-0.313	-1.053		
75.0	.848	1.423	1.522	2.289	1.858	1.559	2.841	2.422		
90.0	2.286	3.727	4.259	5.694	4.806	5.249	6.548	7.632		
95.0	3.376	5.306	6.407	8.063	6.522	6.947	9.937	11.471		
99.0	6.333	10.133	10.077	10.449	10.126	11.904	13.431	14.576		
NO. OF OBS	12944	11064	7780	7290	4812	3215	1960	1323		

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TABLE 13b (cont'd). ALTITUDE 1 TO 5 (KM)
INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-16.847	-17.263	-8.395	-11.629	-13.083	-14.215	-12.183
5.0	-4.613	-5.957	-6.738	-7.744	-9.076	-9.437	-10.622
10.0	-3.423	-4.602	-5.543	-6.006	-6.711	-7.242	-8.058
25.0	-1.692	-2.198	-2.815	-2.595	-3.465	-3.515	-4.015
50.0	-.036	.071	.182	-.252	-.544	-.566	-.889
75.0	1.416	2.523	2.802	2.742	2.345	2.363	2.175
90.0	2.794	4.532	5.945	5.783	5.878	5.284	4.418
95.0	3.563	6.349	7.568	7.115	7.283	6.999	8.154
99.0	5.282	9.730	10.257	9.395	9.199	9.929	10.322
NO. OF OBS	3693	3487	2099	2186	1228	1006	812
							218

ALTITUDE 1 TO 5 (KM)
INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-6.755	-8.332	-9.923	-12.671	-8.703	-11.811	-15.672
5.0	-4.780	-7.022	-8.983	-9.701	-7.677	-11.013	-14.202
10.0	-3.691	-5.957	-7.921	-6.848	-6.990	-10.073	-12.907
25.0	-2.080	-3.088	-3.609	-4.019	-5.800	-7.950	-10.082
50.0	-.463	-.240	.470	-.717	.528	1.890	-2.871
75.0	1.198	2.463	6.181	6.628	8.579	10.163	10.302
90.0	3.222	6.265	10.293	11.635	12.193	13.428	12.642
95.0	5.294	8.074	11.601	13.040	14.997	15.943	13.520
99.0	8.672	11.103	14.495	15.102	17.206	18.027	14.864
NO. OF OBS	989	878	573	607	474	278	167
							61

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TABLE 13b (cont'd). ALTITUDE 1 TO 5 (KM)
INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-10.590	-8.732	-7.199	-12.598	-13.939	-16.882	-19.026	-18.911		
5.0	-7.271	-8.020	-5.540	-10.608	-13.494	-16.010	-10.609	-10.833		
10.0	-3.893	-7.131	-4.975	-9.783	-12.620	-14.919	-19.028	-18.736		
25.0	-0.687	0.009	-0.845	-6.667	-11.269	-13.595	-17.307	-18.260		
50.0	0.924	2.390	1.720	-2.897	-10.305	-12.329	-16.105	-17.292		
75.0	2.750	4.383	4.469	1.571	-9.581	-11.648	-14.131	-16.939		
90.0	3.946	6.267	5.861	3.236	-8.807	-11.103	-13.770	-16.637		
95.0	4.647	7.030	6.411	4.727	-8.012	-10.921	-13.341	-16.444		
99.0	6.543	8.678	7.202	5.665	-7.122	-10.308	-12.668	-16.289		
NO. OF OBS	157	105	72	56	28	28	28	13		

TABLE 13c.

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ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	4.5	Time Differences (Hours)			9.0	10.5	12.0
				6.0	7.5	9.0			
1.0	-5.542	-7.167	-7.207	-6.488	-6.624	-4.166	-4.461	-4.613	
5.0	-5.188	-6.674	-6.553	-5.921	-6.041	-2.488	-3.009	-2.882	
10.0	-4.747	-6.059	-5.737	-5.212	-5.063	-1.459	-2.190	-2.054	
25.0	-3.421	-4.212	-3.287	-3.084	-2.127	-0.184	-0.635	-0.222	
50.0	-1.213	-1.135	.772	.462	1.815	1.675	1.447	1.727	
75.0	.996	2.697	4.628	4.456	4.873	3.661	3.549	3.850	
90.0	2.937	7.292	6.942	6.882	6.709	6.140	5.731	5.756	
95.0	6.720	8.823	7.713	7.691	7.320	7.358	7.260	6.745	
99.0	9.746	10.048	29.329	14.990	24.595	9.833	10.899	9.014	
NO. OF OBS	23531	20985	17193	14122	10183	5761	4215	2371	

ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	1.5	3.0	4.5	Time Differences (Hours)			9.0	10.5	12.0
				6.0	7.5	9.0			
1.0	-9.796	-10.444	-12.221	-12.424	-13.070	-7.775	-9.429	-8.440	
5.0	-9.102	-9.738	-11.467	-11.399	-12.228	-5.231	-7.014	-6.551	
10.0	-8.235	-8.856	-10.524	-10.118	-11.175	-4.075	-5.738	-5.142	
25.0	-5.632	-6.210	-7.694	-6.276	-8.018	-2.025	-2.983	-2.697	
50.0	-1.294	-1.801	-2.978	.126	-2.755	.373	-.616	.310	
75.0	3.044	2.609	1.736	6.435	2.507	3.202	1.809	2.877	
90.0	5.647	5.254	4.568	10.221	12.258	5.763	4.504	5.804	
95.0	6.515	6.136	11.358	11.483	17.079	7.278	9.275	8.851	
99.0	7.209	12.994	23.489	12.492	21.082	10.889	12.114	12.546	
NO. OF OBS	18724	16758	12532	9969	7729	4360	2792	1654	

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TABLE 13c (cont'd). ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-11.859	-12.628	-11.912	-13.967	-14.721	-13.739	-11.542
5.0	-6.578	-5.599	-7.901	-9.093	-9.622	-8.130	-9.964
10.0	-3.675	-4.386	-6.140	-5.267	-6.726	-5.761	-6.739
25.0	-2.552	-2.753	-2.634	-2.080	-3.028	-2.773	-1.289
50.0	-6.81	-0.032	0.076	1.021	0.036	0.832	1.739
75.0	1.190	3.242	2.659	3.264	2.383	3.489	13.665
90.0	4.067	5.298	6.262	5.537	4.712	10.271	18.284
95.0	6.182	5.984	11.228	9.256	6.712	15.407	21.616
99.0	11.207	12.346	22.893	20.104	9.953	18.709	27.690
NO. OF OBS	8118	7241	4825	4054	2695	1588	1093

ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES (M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-22.525	-23.108	-8.758	-16.341	-11.358	-8.332	-10.717
5.0	-7.647	-9.511	-5.713	-8.666	-6.194	-5.658	-7.223
10.0	-4.560	-8.669	-4.592	-6.153	-4.592	-4.306	-6.081
25.0	-2.002	-6.142	-1.867	-2.996	-2.801	-2.636	-3.614
50.0	-4.07	-1.932	0.304	0.141	0.188	0.836	0.362
75.0	1.124	3.517	3.179	3.186	2.926	4.477	5.263
90.0	2.772	8.754	5.635	6.357	5.567	8.908	9.728
95.0	4.073	10.499	7.900	8.176	7.368	11.452	11.493
99.0	7.400	11.896	16.725	13.029	13.833	19.582	24.451
NO. OF OBS	5886	5532	3246	3466	2068	1201	1119

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TABLE 13c (cont'd). ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-33.552	-32.310	-12.115	-14.131	-15.426	-18.658	-21.737	-18.359
5.0	-6.669	-11.917	-9.447	-10.155	-12.061	-13.211	-16.114	-17.676
10.0	-4.795	-10.804	-6.705	-6.696	-10.209	-8.592	-14.912	-16.780
25.0	-2.493	-7.466	-3.657	-3.354	-6.768	-4.659	-9.765	-10.856
50.0	-0.444	-1.902	-0.842	-0.201	-1.298	-0.570	-1.174	-1.621
75.0	1.556	5.222	2.140	3.007	2.735	2.906	2.152	.667
90.0	3.601	10.399	5.728	5.969	6.534	5.550	3.678	4.019
95.0	5.114	12.124	8.163	8.543	8.331	7.428	5.258	4.743
99.0	8.580	13.505	13.582	13.866	11.374	9.400	7.724	6.027
NO. OF OBS	4408	3734	2631	2787	1692	1013	802	303

ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-35.115	-34.059	-16.312	-19.739	-19.767	-22.193	-21.922	-20.695
5.0	-8.741	-14.267	-13.611	-15.569	-18.330	-20.419	-20.155	-19.316
10.0	-7.818	-10.345	-12.342	-14.771	-16.276	-18.744	-18.781	-17.721
25.0	-5.049	-7.417	-9.561	-7.792	-10.139	-12.594	-11.917	-15.467
50.0	-1.474	-2.835	-2.681	-1.138	-3.104	-4.041	-6.142	-4.336
75.0	1.187	1.138	.849	3.244	1.908	.840	-1.906	-0.754
90.0	2.783	5.065	3.657	5.632	5.196	3.695	-0.193	.598
95.0	4.758	7.223	4.910	7.325	6.800	5.258	1.082	1.049
99.0	8.248	8.949	6.548	8.660	8.301	6.225	3.170	1.410
NO. OF OBS	2281	2062	1149	1163	970	735	600	182

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TABLE 13c (cont'd). ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 60 TO 70 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-10.534	-17.147	-20.278	-22.981	-24.345	-25.166	-22.619
5.0	-7.568	-11.201	-16.664	-20.810	-20.913	-23.837	-21.926
10.0	-5.833	-10.284	-15.656	-19.899	-18.959	-22.839	-21.414
25.0	-3.788	-8.007	-13.562	-16.134	-16.900	-19.084	-20.284
50.0	-1.203	-3.822	-8.667	-11.308	-12.638	-15.240	-18.990
75.0	.562	-.394	-3.696	-6.626	-9.221	-12.957	-15.189
90.0	2.091	1.547	-.453	-3.477	-7.588	-9.964	-12.768
95.0	2.732	2.147	.793	-2.292	-6.675	-8.712	-10.122
99.0	3.931	3.292	3.062	-.471	-4.563	-6.127	-8.473
NO. OF OBS	985	794	754	739	563	458	332
							135

ALTITUDE 5 TO 10 (KM)
INITIAL WIND SPEED 70 TO 80 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.760	-7.729	-10.712	-15.371	-19.428	-25.252	-18.442
5.0	-4.993	-6.935	-10.519	-14.774	-19.139	-24.660	-18.012
10.0	-4.413	-6.391	-10.279	-14.103	-18.778	-23.920	-17.474
25.0	-3.555	-4.423	-9.557	-12.985	-17.643	-21.699	-15.859
50.0	-2.588	-3.230	-7.842	-6.260	-13.963	-17.673	-13.169
75.0	-.710	-.979	-4.262	-4.113	-8.746	-12.601	-9.558
90.0	.027	.040	-.548	-3.059	-6.949	-8.578	-6.709
95.0	.259	.301	-.084	-2.579	-5.934	-7.209	-5.760
99.0	.630	1.189	.287	-2.196	-4.827	-6.114	-5.000
NO. OF OBS	67	94	70	100	100	84	47
							47

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TABLE 13d.

ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 0 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-5.660	-5.729	-6.298	-6.700	-6.311	-7.508	-6.178
5.0	-3.280	-3.920	-4.084	-3.759	-4.198	-5.046	-5.088
10.0	-2.405	-2.864	-2.825	-2.288	-2.892	-3.357	-3.727
25.0	-.897	-.953	-.454	-.322	-.686	-.519	-1.186
50.0	.585	1.167	1.531	1.994	2.505	2.320	2.720
75.0	2.584	3.409	4.241	5.180	6.148	5.584	6.822
90.0	5.293	5.926	7.404	8.682	8.348	8.205	9.656
95.0	10.000	10.770	11.775	12.487	12.469	9.724	11.134
99.0	17.135	17.790	17.939	19.766	17.238	17.617	20.043
NO. OF OBS	9219	8456	6597	5785	3670	1796	1028
							632

ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-10.399	-10.638	-11.471	-12.167	-13.245	-12.615	-12.344
5.0	-4.428	-6.015	-7.698	-8.034	-8.763	-9.341	-9.301
10.0	-3.055	-3.987	-5.245	-5.619	-6.395	-7.314	-7.008
25.0	-1.352	-1.670	-2.388	-2.537	-2.905	-3.713	-3.346
50.0	.192	.452	.376	.371	.338	-.199	-.289
75.0	1.777	2.792	3.016	3.321	3.959	3.182	2.724
90.0	3.608	5.835	6.092	6.510	7.260	6.211	6.791
95.0	5.630	8.853	8.883	9.477	9.462	8.335	11.808
99.0	25.475	22.399	30.546	33.915	16.170	12.864	42.450
NO. OF OBS	21517	18948	15516	12021	8974	5231	4110
							2337

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TABLE 13d (cont'd). ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-17.225	-17.693	-18.334	-18.246	-16.881	-15.057	-18.401	-14.941		
5.0	-11.457	-10.215	-12.726	-12.003	-12.912	-11.954	-16.684	-13.906		
10.0	-5.768	-7.352	-9.462	-10.439	-8.644	-10.068	-14.538	-12.612		
25.0	-2.249	-3.257	-4.725	-5.746	-4.677	-6.286	-8.099	-8.731		
50.0	-0.427	-0.895	-1.450	-0.427	-1.455	-2.942	-2.694	-2.261		
75.0	1.295	1.584	2.156	3.657	2.180	1.123	2.292	4.208		
90.0	3.669	4.594	5.213	6.107	5.682	4.265	10.771	22.622		
95.0	6.574	10.817	11.883	12.285	7.818	5.728	35.974	34.590		
99.0	26.102	29.026	39.221	46.015	14.355	7.735	47.820	45.446		
NO. OF OBS	10572	9107	6831	4945	3802	2293	1372	1028		

ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)									
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0		
1.0	-25.787	-25.803	-20.648	-26.155	-22.532	-19.645	-22.941	-13.539		
5.0	-19.364	-17.569	-16.419	-17.567	-17.488	-14.700	-19.585	-11.520		
10.0	-10.126	-9.660	-12.713	-13.464	-15.188	-11.442	-15.100	-9.266		
25.0	-2.097	-3.389	-4.517	-4.491	-4.091	-3.604	-4.984	-3.528		
50.0	0.283	-0.468	0.243	0.671	1.587	1.079	1.352	1.472		
75.0	2.108	2.226	3.741	4.178	5.294	4.463	5.365	6.359		
90.0	4.633	5.327	7.611	7.758	8.408	8.108	10.262	9.343		
95.0	9.236	10.031	11.388	12.535	12.000	9.318	12.692	10.293		
99.0	16.404	19.426	20.081	18.421	15.784	19.160	24.349	12.097		
NO. OF OBS	7144	6489	4176	4440	3253	1814	1173	665		

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TABLE 13d (cont'd). ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-20.165	-32.938	-20.792	-21.686	-25.119	-23.587	-22.077	-18.536
5.0	-20.989	-17.947	-15.460	-17.886	-21.409	-11.732	-19.734	-11.569
10.0	-9.584	-11.607	-7.529	-11.442	-12.908	-6.261	-15.697	-6.793
25.0	-2.140	-3.864	-2.339	-2.772	-1.204	-1.371	-0.736	-0.403
50.0	.076	-0.511	.987	1.331	3.138	3.545	3.282	3.363
75.0	2.024	1.997	3.941	4.599	6.405	6.671	8.425	5.789
90.0	4.932	4.515	7.729	7.681	10.812	11.154	13.364	7.473
95.0	7.945	7.835	10.048	10.953	13.256	18.324	22.231	8.821
99.0	16.355	17.288	26.659	15.451	17.409	26.489	26.470	10.985
NO. OF OBS	6279	5927	3841	4117	2698	1589	1179	441

ALTITUDE 10 TO 15 (KM)
INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)							
	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0
1.0	-41.405	-32.603	-21.956	-27.812	-35.552	-29.295	-28.747	-23.152
5.0	-17.802	-27.324	-10.823	-23.605	-27.604	-19.328	-26.281	-21.759
10.0	-6.369	-11.134	-8.562	-11.094	-18.209	-10.466	-17.418	-20.019
25.0	-2.849	-3.641	-4.391	-3.512	-4.441	-4.362	-6.207	-7.567
50.0	-0.631	-0.282	-1.489	.078	-0.590	-0.326	-2.016	-3.086
75.0	1.406	2.271	1.849	4.252	4.397	3.675	.241	1.268
90.0	4.085	4.610	6.143	7.439	9.224	7.761	3.014	3.735
95.0	7.667	6.525	10.323	10.697	12.883	9.964	5.163	4.558
99.0	17.558	15.607	17.094	17.807	20.846	12.264	11.511	5.216
NO. OF OBS	5362	4557	2650	2694	1674	1257	1110	311

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TABLE 13e.

ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED .2 TO 10 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-5.518	-5.967	-5.314	-5.730	-5.245	-5.528	10.5
5.0	-3.125	-3.517	-3.203	-3.615	-3.252	-3.272	-5.657
10.0	-2.049	-2.282	-2.283	-2.524	-2.071	-2.166	-2.982
25.0	-.796	-.756	-.890	-.814	-.642	-.727	-1.886
50.0	.102	.190	.111	.219	.166	.143	-.363
75.0	1.267	1.648	1.651	1.825	1.429	1.681	.500
90.0	3.328	4.209	4.510	4.570	4.506	4.979	2.084
95.0	5.399	6.900	7.608	7.179	6.799	6.922	6.053
99.0	14.311	15.703	15.070	15.822	12.092	10.785	8.981
							12.430
							22.746
NO. OF OBS	35737	32125	24433	20151	14455	8000	5904
							3342

ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED 10 TO 20 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	
1.0	-12.996	-12.522	-13.276	-11.114	-12.741	-12.005	10.5
5.0	-8.493	-8.380	-9.041	-8.015	-9.052	-8.681	-11.137
10.0	-5.862	-6.140	-6.701	-6.313	-6.873	-7.312	-9.068
25.0	-2.640	-2.705	-3.557	-3.462	-3.608	-4.391	-7.585
50.0	-.666	-.412	-.607	-.608	-.710	-1.125	-4.604
75.0	1.794	2.395	2.510	2.349	2.420	1.667	-1.398
90.0	4.304	6.235	6.363	6.293	6.024	6.106	4.021
95.0	7.045	10.205	9.373	9.761	7.971	8.998	9.708
99.0	15.654	24.312	19.884	21.252	14.176	14.287	13.953
							25.800
NO. OF OBS	14585	12624	9461	8196	5671	3317	2203
							1206

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TABLE 13e.(cont'd) ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED 20 TO 30 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-20.663	-20.702	-21.391	-17.456	-18.739	-14.404	-17.277
5.0	-14.659	-13.728	-14.006	-11.486	-12.333	-10.836	-13.346
10.0	-9.552	-9.357	-10.006	-8.515	-8.145	-8.860	-11.083
25.0	-3.876	-3.882	-5.173	-4.367	-3.959	-4.321	-6.278
50.0	-1.719	-1.585	-1.638	-1.570	-1.211	-1.453	-1.185
75.0	1.788	1.956	3.421	3.132	3.463	2.819	2.947
90.0	4.636	5.529	6.606	6.619	7.521	6.792	8.287
95.0	7.338	7.544	9.851	9.531	9.890	10.248	10.593
99.0	14.085	16.101	14.571	19.390	13.337	15.614	18.724
NO. OF OBS	7800	6992	4953	4733	3296	2101	1425
							611

ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED 30 TO 40 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)						
	1.5	3.0	4.5	6.0	7.5	9.0	10.5
1.0	-25.750	-25.007	-24.769	-25.286	-26.838	-19.436	-18.654
5.0	-17.218	-14.284	-22.033	-15.597	-21.112	-16.214	-16.426
10.0	-8.678	-9.885	-12.126	-11.301	-11.971	-13.197	-11.559
25.0	-3.512	-4.883	-6.348	-6.104	-4.980	-5.860	-6.600
50.0	-1.411	-1.921	-1.574	-1.252	-1.988	-1.573	-1.701
75.0	1.949	1.821	2.860	3.029	2.881	2.402	2.704
90.0	4.971	5.282	6.193	5.571	6.631	5.649	6.070
95.0	6.562	7.171	7.477	7.748	9.362	8.198	8.154
99.0	12.603	13.973	14.177	16.312	14.378	14.263	10.767
NO. OF OBS	4026	3888	2453	2304	1708	1174	883
							393

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TABLE 13e (cont'd) ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED 40 TO 50 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-22.112	-30.586	-19.101	-14.543	-33.935
5.0	-13.603	-18.338	-14.948	-12.501	-30.875
10.0	-9.581	-15.348	-12.794	-10.371	-24.294
25.0	-4.501	-6.754	-7.464	-7.049	-8.534
50.0	-1.399	-2.894	-3.043	-3.505	-3.627
75.0	.911	-.439	.823	-.387	1.021
90.0	3.136	1.825	3.741	2.879	4.334
95.0	5.224	3.445	5.151	6.871	7.057
99.0	8.280	7.624	8.862	9.516	9.523
NO. OF OBS	1632	1359	929	859	737
					521
					502
					211

10.5 12.0
-22.155 -22.600
-20.394 -21.281
-17.977 -19.631
-11.612 -12.880
-5.862 -7.009
-2.420 .200
.315 4.317
3.545 5.691
6.194 8.810

ALTITUDE 15 TO 20 (KM)
INITIAL WIND SPEED 50 TO 60 M/SEC
WIND SPEED CHANGE VALUES(M/SEC)

PERCENT LEVELS	Time Differences (Hours)				
	1.5	3.0	4.5	6.0	7.5
1.0	-20.652	-32.902	-18.822	-11.996	-30.439
5.0	-19.033	-29.110	-18.311	-11.498	-19.757
10.0	-17.813	-20.590	-17.667	-10.877	-15.756
25.0	-9.546	-16.066	-13.629	-9.012	-10.900
50.0	-3.071	-10.018	-8.917	-6.518	-6.088
75.0	-.270	-1.913	-4.214	-4.286	-2.273
90.0	2.042	1.461	-2.277	-1.047	2.194
95.0	3.262	2.585	.672	4.108	4.622
99.0	4.922	3.485	4.637	7.278	6.564
NO. OF OBS	220	212	171	157	133
					87
					83
					37

10.5 12.0
-23.339 -22.983
-21.213 -22.593
-17.147 -22.106
-12.185 -20.644
-7.274 -18.208
-3.462 -6.095
-.474 -.723
.633 .739
1.519 1.908

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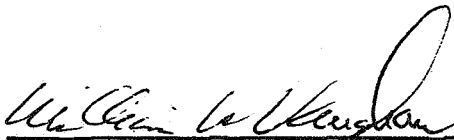
APPROVAL

MONTHLY AND ANNUAL PERCENTAGE LEVELS OF WIND SPEED DIFFERENCES COMPUTED BY USING FPS-16 RADAR/JIMSPHERE WIND PROFILE DATA FROM CAPE KENNEDY, FLORIDA


by Michael Susko and John W. Kaufman

The information in this report has been reviewed for security classification. Review of any information concerning Department of Defense or Atomic Energy Commission programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.

This document has also been reviewed and approved for technical accuracy.



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